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ABSTRACT

Information was gathered about how Technical and Further Education (TAFE) agencies throughout Australia were implementing and using performance indicators. The context of TAFE's perceived mission and corporate goals were considered. A history of the development of national performance indicators in TAFE was compiled. The project drew heavily on letters and accompanying documentation provided by individuals or groups within state/territory TAFE agencies to study initiatives in developing performance indicators. Findings indicated that Victoria, Tasmania, and the Northern Territory had undertaken relatively little development, although the issue was receiving significant attention in Victoria. Western Australia, New South Wales, Queensland, and South Australia had made significant progress in the development of performance indicators and systems. The Australian Capital Territory Institute of TAFE had a considerable history in the development and use of performance indicators. A review of the literature focuses on the following key words: planning, management information, accountability, and quality and quality improvement. In a final chapter, this publication uses an extended medical analogy to look at the strengths and weaknesses of performance indicators and considers a range of other issues, such as data quality, social justice and the use of performance indicators, and the development and implementation process. (A 78-item bibliography is included, followed by 4 appendixes: a project network list; a list of indicators and collection processes; comments on specific indicators; and a list of performance indicators.) (YLB)

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PERFORMANCE INDICATORS REVISITED

TAFE

HUGH GUTHRIE

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List of abbreviations used in the text

ABS	Australian Bureau of Statistics
ACTD	Australian Conference of TAFE Directors
ASCH	Annual Student Contact Hours
BEVFET	Bureau of Employment, Vocational and Further Education and Training
CBPMS	College Budgets and Performance Monitoring Section (Resources Management Division, State Training Board, Victoria)
COTTS	VEETAC Committee on TAFE and Training Statistics
DEET	Department of Employment, Education and Training
DETAFE	Department of Employment and TAFE (South Australia)
DTAFE	Department of TAFE (Western Australia)
EFT	Effective full-time
FAAA	Financial Administration and Audit Act (Western Australia)
HMSO	Her Majesty's Stationery Office (UK)
IPM	Integrated process management
ITD	Industry Training Division (TAFE, New South Wales)
JCTAFES	Joint Committee on TAFE Statistics
KPI	Key performance indicator
LEA	Local Education Authority (UK)
NATMISS	National management information/statistical system
PMG	Program Management Group (DETAFE, South Australia)
PPMC	Planning, Program and Management Committee (DETAFE, South Australia)
SQM	Strategic Quality Management
STB	State Training Board (Victoria)
STS	State Training System (Victoria)
TQM	Total quality management
TVEI	Technical and Vocational Education Initiative (UK)
VEETAC	Vocational Education, Employment and Training Advisory Committee

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Hugh Guthrie
October 1991

Chapter one: Introduction

1988 saw a flurry of activity relating to the development and use of performance indicators, particularly at the national level. This work was stimulated by activities occurring in a number of States, but principally Queensland, New South Wales and Western Australia. Both of the latter States were required to report performance under relevant acts. National initiatives, coordinated by WA TAFE produced two reports for the Australian Conference of TAFE Directors (ACTD) (Goldsworthy 1988a, 1988b) and a series of agreed and nationally-based key performance indicators.

In addition, both the schools and higher education sectors have shown an increasing concern with the use of indicators of their performance. In the former case this has been reflected in the initiation of a project of significance funded through the Department of Employment, Education and Training (DEET) and the Conference of Directors-General of Education. It has produced, amongst other things, a series of bulletins on performance indicators (the *Reporting on educational progress* monograph series - see bibliography for a complete listing) as well as coordinating national conferences, the first of which was held in Sydney in 1988 (see Wyatt and Ruby 1988). More recently a conference on performance indicators was held in Canberra.

Recent literature from the higher education sector both in Australia and overseas (particularly continental Europe and the UK) has described significant developments in this area, particularly those related to performance of individual institutions as well as a consideration of the range of socio-political issues thrown up by the development and use of performance indicators.

While 1988 represented a high point in the TAFE systems' activity at a national level in Australia, progress has been made towards the development and use of indicators as planning, management, decision-making, quality improvement and accountability tools since that period. Most of this activity has occurred at a State/Territory level however, and relatively little literature describing what has been going on is readily available.

Interest at the national level was reawakened in the lead up to, and following the special meeting of ministers responsible for training held on 2 November, 1990. At that meeting the ministers . . .

> . . . endorsed the development of new managerial information systems to meet the needs of system managers at the institutional, State and Commonwealth levels. Substantial progress towards specifying should be made by 1 July 1991. **Ministers also endorsed the preparation of a uniform system of key performance indicators with annual publication of comparisons based on these key performance indicators.** (My emphasis)
>
> (Resolutions of the special meeting of ministers responsible for training, November 1990, p.4)

VEETAC noted the need for urgent action to establish key performance indicators which were valid across Australia's TAFE systems.

The VEETAC Committee on TAFE and Training Statistics is playing a leading role in the development of these indicators, using the 1988 work (Goldsworthy 1988a, 1988b) as a basis.

The present project forms part of the TAFE National Centre's response to these national and State-based initiatives. The project was proposed in 1988 and approved for funding by the Centre's Board in 1989.

Broadly, its aims are to examine and report on the range of indicators used by various agencies and describe and compare the mechanisms used to select, define, measure and report the indicators used. It has achieved this by:

- establishing a national network of those interested in the development and use of performance indicators (see Appendix 1 for the names and contact addresses for the network);

- helping to develop a paper relating to performance indicators for the VEETAC Committee on TAFE and Training Statistics for submission to VEETAC (COTTS 1991). This paper gathered information from individual State/Territory TAFE agencies about their current development and use of performance indicators and has formed the basis of the first three chapters of this report;

- gathering, reading and critically reviewing reports and a variety of other documents produced by State/Territory TAFE agencies;

- gathering and reviewing other relevant literature both from Australia and overseas. (Much of the literature gathered from TAFE and other sources is contained in the bibliography at the end of this report.);

- visits to and discussions with key staff concerned with the development and implementation of performance indicators in a number of TAFE agencies; and

- attending or organising appropriate seminars, workshops or other forums relevant to this project.

Nevertheless much of this report focuses on those indicators which have had a measure of national agreement.

This report integrates these various activities and considers:

- the current interest and climate in which the development of performance indicators is occurring (Chapter 2);

- how the various State and Territory TAFE agencies are developing and using performance indicators (Chapter 3); and

- what the literature both in Australia and overseas has to say about performance indicators (Chapter 4).

This will be drawn together in a final chapter which will highlight and discuss the issues raised in the earlier chapters of the report, draw some conclusions and suggest some key future directions.

Chapter two: Performance indicators - context and national initiatives

Introduction

As part of the process of preparing a paper on performance indicators for VEETAC, the Centre undertook an examination of the development and use of a range of indicators in all States/Territories. While the study focused in those which had been agreed to nationally in 1988, other indicators in use and state processes were also explored. The present chapter therefore presents the information gathered for VEETAC, together with other information which has been collected subsequently. Much of the former information was gathered with the help of members of the VEETAC Committee on TAFE and Training Statistics. This assistance and the help of their colleagues in a number of States and Territories have been invaluable in preparing the contents of this chapter, and Chapter 3. Indeed, much of its content represents the edited content of letters and other documents made available by them.

The context for the development of performance indicators

By any measure TAFE is diverse. While the provision of vocational education programs or courses at a variety of levels (ranging from short courses through trades to paraprofessional and professional courses), areas such as further education, pre-vocational programs, labour market programs and traineeships have to be taken into account. TAFE agencies are diverse too, varying in their organisational size, scope, governance and approaches to management. Thus the boundaries of TAFE are broad and hard to establish with any great precision. Despite this, the various TAFE agencies have much in common. Much of this commonality is expressed in their mission statements; for example TAFE in Western Australia sees its mission as:

> To meet client needs for skills formation with quality services which contribute to economic and social development.
>
> (1989-90 Annual Report, Department of TAFE, Western Australia, p.3)

Typical goals of such mission statements include:

- To provide a broad range of relevant education and training programs of quality to the clients of the system;
- To achieve the greatest possible use of the community's investment in people and facilities in TAFE colleges; and

  (Goals for the State Training System - Information Statement Number 5, March 1990, State Training Board, Victoria)
- To develop an organisational culture and practices, including accountability measures, to maximise educational output and the achievement of management priorities.

  (Corporate Review and Annual Report, 1989, Department of Employment and TAFE, South Australia, p.8)

In NSW under the new Technical and Further Education Commission legislation, TAFE is required to present to the minister an annual corporate plan. This plan must specify objectives, strategies, budgets and criteria for assessing the performance of the commercial and non-commercial activities to be undertaken by TAFE in the following financial year.

Within the context of the three year corporate plan, the management plan focuses on key activities for the next year. In its draft management plan for 1991-92, the NSW TAFE Commission has developed seven objectives, all of which have measurable outcomes and implications for performance indicators. The TAFE management plan objectives are:

- Provide education and training programs to efficiently and effectively meet the State's social and industry needs.
- Implement marketing strategies to achieve an overall self-funding target for TAFE of 12% and returns on funds employed acceptable to government.
- Improve the quality of service to internal and external customers.
- Advise the minister on issues relating to post-compulsory education and training, and policies and structures for the effective and efficient operation of TAFE.
- Implement new management information systems for TAFE's devolved organisational structure.
- Manage human resources effectively.
- Implement a more effective and efficient framework for the management of TAFE's financial and physical resources.

The outcomes of these objectives are primarily concerned with:

- improved outcomes for students;
- improved customer satisfaction;
- increased productivity;
- increased income generation; and
- improved management information systems.

In the ACT the 1989 annual report of the ACT Institute of TAFE (p.6) has, as one of its 4 key goals, the management of

> . . . the human, physical and financial resources of the Institute to ensure efficiency, quality and effectiveness of services provided by the Institute.

Similar goal statements exist for the other TAFE agencies.

The following extracts indicate how several of the States and Territories are addressing the implications of their mission statements and corporate goals, particularly in relation to the development and use of management information systems and their associated performance indicators.

The State Training Board in Victoria aims to improve accountability by (amongst other things):

- [the] development of an integrated management information system and the publication of system standards; and
- publication of information about the performance of providers through the use of standard performance indicators.

South Australia has two relevant strategic priorities. These are:

- To improve database and related systems; and
- To introduce indicators of performance which will assist the department, colleges, [central office] divisions and program management groups to plan, manage and report their work.

TAFE in Western Australia seeks to achieve its mission by improving college effectiveness and organisational efficiency. New South Wales has identified a range of strategies to improve the measurement of its performance. These strategies include the monitoring by colleges, college networks (now Institutes) and industry training divisions of student outcome measures for selected courses and also promoting common techniques for monitoring improvement and assessing customer satisfaction.

Other States, including Queensland, are actively engaged in improving and integrating their central statistical databases in order to provide better management information systems. Indeed, the increased emphasis on improved public administration in Queensland has been manifested by the introduction of a system of program management which uses the processes of strategic planning, management information systems, performance indicators and regular program evaluation and review to improve the quality of goods and services, thereby meeting its accountability requirements better. The approach is summarised in a series of publications entitled *'Making results matter'* (Queensland Treasury 1990a, 1990b, 1990c).

Key words and phrases derived from the mission statements and corporate goals, and which are relevant to the development and use of performance indicators, therefore include:

- planning;
- using and reporting;
- quality and quality improvement;
- accountability;
- efficiency and effectiveness;
- meeting needs; and
- better management and associated information systems (which may be used to help measure the achievement of goals and priorities).

Performance indicators must be seen within the context embraced by the key words and phrases listed above. However, performance indicators are not an end in themselves, but help to provide the information needed to achieve ends. Moreover, the development of performance indicators is not a straight-forward exercise: the definition and derivation of summary statistics or the ratios which make up a number of the indicators can present difficulties.

If the data from which indicators are derived are not accurate (or if data elements are going to be compared), and are based on different definitions or interpretations of a single definition, there will be a compounding effect on the accuracy of the indicators themselves[1]. At the national level those responsible for gathering and processing TAFE's statistical data are very conscious of the need to improve the accuracy, comparability and validity of TAFE's statistical collections.

Work at the national level on improving the accuracy and validity of the TAFE national statistical collection is occurring under the auspices of the VEETAC Committee on TAFE and Training Statistics (COTTS). One of this committee's roles is to develop a new national management information/statistical system (NATMISS). This system will provide for the management information needs at State/Territory and national levels, drawing on data from college management systems and encompass student, course, staff, financial and other resources data.

---

[1] This issue is picked up again in Chapters 4 and 5.

In particular, the new information system will:

- provide consistent, timely and accurate management data both within and between systems (at national level); and
- sustain a set of national key performance indicators (KPIs).

A project officer has been appointed by COTTS to work at the national levels. The role and duties of this officer include:

- developing the scope of management and statistical information appropriate to VEETAC decisions on TAFE;
- identifying the data concepts and relationships which NATMISS should encompass, on either a compulsory or discretionary basis, and define these in operational terms;
- developing the specifications for nationally consistent management information data sets to be used at local, system and national levels, including key performance indicators;
- developing a program for the implementation of NATMISS, encompassing the progressive expansion of scope, information programs, computer systems, staff training and publication requirements; and
- planning, in conjunction with staff in Commonwealth, State/Territory agencies and the TAFE National Centre for Research and Development, for the delivery of information from the variety of computer systems which are operated by the various colleges and agencies.

$1m has been set aside to support these initiatives.

National performance indicators in TAFE - a background

In February 1988 a group of TAFE planners met in Melbourne to consider the work being undertaken in each of the States and Territories on the development of performance indicators. This meeting was coordinated by staff from TAFE in Western Australia. One of the outcomes of this meeting was a series of suggested performance indicators which the group considered could be used at a national level for gauging the effectiveness and efficiency with which the TAFE sector achieves its objectives.

The report produced by this group (Goldsworthy 1988a) was then forwarded to the Australian Conference of TAFE Directors (ACTD) for their comment. The ACTD endorsed in principle the usefulness of a nationally agreed set of performance indicators and referred the document to a special ACTD working party. The report of this latter group was tabled at the August 1988 meeting of the ACTD and the following recommendations endorsed:

Recommendation 1.

ACTD to accept the following national performance indicators as an agreed set of performance indicators:

Effectiveness Indicators

(i) Student destinations;
(ii) Examination pass rates (changed subsequently to subject pass rate);

(iii) Sat examination rates (changed to subject completion rate); and
(iv) Annual graduate numbers.

Efficiency Indicators

(i) Student contact hours per teaching hour;
(ii) Average teaching hours per full-time teacher; and
(iii) Recurrent cost per student contact hour per course.

Recommendation 2

ACTD to endorse the need for an ongoing working group to establish the actual negotiations and mechanisms as direct negotiation with the Commonwealth will require a coordinated consistent stance.

Recommendation 3

Subject to 2, reconvene an appropriate TAFE performance indicator group to finalise details and methodologies.

The working group also recommended that indicators of student satisfaction, industry satisfaction and unmet demand be developed. It was felt, however, that these should be referred to the TAFE National Centre for Research and Development[2].

As a result, the TAFE performance indicators planning group met again in October 1988 under the auspices of the (then) Joint Committee on TAFE Statistics (JCTAFES). The terms of reference of the working party were to:

(i) Establish a standardised methodology (including definitions) for the collection of data for the performance indicators outlined in recommendation 1.

(ii) Outline the format and frequency of performance indicator information that should be presented at a national level.

(iii) Outline the format of other performance indicator information that would be useful as a management tool within each State TAFE system but would not necessarily be reported as national statistics.

(iv) Provide an audit of the current status of performance indicator development within each State TAFE system and their respective requirements to implement the recommended set of effectiveness and efficiency indicators.

A report of this meeting was prepared (Goldsworthy 1988b). The meeting also considered how to collect the performance indicators outlined in recommendation 1 and examined other potential indicators, including:

- student satisfaction;
- industry satisfaction;

---

[2]. The TAFE National Centre for Research and Development has developed procedures for both student and industry (client) satisfaction for the South Australian Department of Employment and TAFE (see Hayton et al. 1991). This work has been based in part on work conducted in other State/Territories. In addition, Western Australia has been commissioned by the TAFE National Centre to conduct a project in gathering information on *student destinations*. Queensland (see Weeks 1990) has collected data on student destinations. A number of States and Territories have developed and trialled these and a range of other indicators. For example, Queensland TAFE has attempted to assess the unmet demand for its courses in Streams 2000-4500 in 1990 (BEVFET 1990a).

- unmet demand;
- annual student contact hours/equivalent full-time lecturer;
- participation rates (of targeted groups); and
- student contact hours/seat of capacity.

Several of the indicators listed above have been developed and trialled in a number of States and Territories (e.g. Weeks 1990, BEVFET 1990a).

A particular concern of the group was the quality and accuracy of the basic data from which any management information systems and their associated performance indicators were developed. It was felt, then, that there needed to be substantial improvements in the collecting and processing of data (as well as eliminating differences in definitions of key features) if indicators were to be comparable and to accurately reflect reality. These concerns persist. Improvements are being pursued by means of a comprehensive program to establish nationally consistent management information and statistical systems, a task previously undertaken by the former Joint Committee on TAFE Statistics (JCTAFES). This work continues under COTTS with national project funding in 1991 of $1m.

The key indicators at the national level

A summary of practice with respect to the key indicators outlined on pages 7 and 8 is presented in Figure 2.1. Details about how each of the indicators is collected in each State/Territory are appended (see Appendix 2).

At the COTTS meeting in February 1991 the list of ACTD agreed indicators was examined. Since the meeting, agreed indicators have been refined; additional indicators were also proposed and considered.

Subsequently a paper was developed by COTTS and presented to the April 1991 meeting of VEETAC. This chapter and the next are derived very largely from that VEETAC paper (COTTS 1991) and its associated appendices.

The indicators proposed and agreed to are in four main areas:

- **Client assessment** (student destinations; student and industry satisfaction);
- **educational achievement** (including sat examination rates, subject pass rate, course/program completion numbers, student contact hours/direct teaching hours, average teaching hours/full-time teacher and cost/student contact hour);
- **access** (TAFE participation rates and unmet demand); and
- **commercial activity** (industry funded training/total recurrent funding and a staff development/industry experience indicator to be developed).

The COTTS paper (COTTS 1991) makes a number of comments about each of these specific indicators. These notes are appended (Appendix 3).

The COTTS responses to VEETAC suggested that the move towards the collection and publication of a set of national key performance indicators (KPIs) has highlighted the current problems which all States and Territories have in consistently defining the scope of vocational and further education, as well as the training sector (including TAFE), in a rapidly changing environment. The emergence of the need to encompass measurement of (if not the coordination of) training in private providers, industry and a range of other training initiatives has magnified the problems of performance specification and measurement using performance indicators.

Figure 2.1 Key performance indicators and their use

KEY INDICATOR	STATE/TERRITORY							
	ACT	NSW	NT	QLD	SA	TAS (11)	VIC	WA
EFFECTIVENESS								
Student destinations	0	0[1]	X	0	SEE CHAPTER 3	X	X	X[7]
Subject pass rate	0	0	X	0		0	X[2]	0[8]
Subject completion rate	0	0	X	0		0	X[2]	0[8]
Annual graduate numbers	0	0	X	0		0	0[3]	0[7,9]
EFFICIENCY								
Student contact hours/ teaching hours	0	0	0	0		0	0	0
Av.teaching hours/full-time teachers	0	0	0	0		0	X[5]	0[7]
Recurrent cost/ student contact hours/course (13)	0	X[4]	X[12]	0		0	0[6]	X[10]

0 in use, X not in use

Notes relating to Figure 2.1

1. Collected by 6 Industrial Training Divisions in NSW (out of 10)
2. Some data available through Examinations Branch
3. Regarded as useless statistic and dangerous information without substantial qualifications and notes.
4. See information in Appendix 2.
5. See information in Appendix 2.
6. Is the most widely used indicator of college performance.
7. Not formally constituted as a performance indicator.
8. Audits of the 1989 resource agreements cast doubt on the value of these indicators because of the manner in which they were set and reported/aggregated.
9. Planned as key performance indicator.
10. Current collection and computation methods not seen as sufficiently reliable or accurate for use as a performance indicator.
11. While the indicators marked as 'in use' can be calculated, considerable manual effort is involved to assemble and process the necessary data.
12. Hoping to have this indicator available in 1991.
13. In many cases these data cannot be collected at the course level. They are collected at a higher order of aggregation (Department, School, etc.)

Moreover, there are significant problems within each State and Territory which are ultimately accumulated at national level. These problems present a high challenge for both goal definition and performance measurement. There are fundamental differences in government and other structures related to the provision of vocational and further education between States and

Territories. In addition, work already done for the JCTAFES and by a COTTS Working Party has shown the variation in interpretation of well defined statistical collections between collecting authorities and organisations.

The report suggested that in order for the set of national key performance indicators to have maximum usefulness and to allow publication without volumes of explanatory text to assist interpretation, work needed to be undertaken to define the core populations and programs to be included in the initial collection. This work will also assist identification of issues to be tackled in the ongoing work of the COTTS Working Party. Included in its responsibilities will be the preparation of a schedule to expand the scope of data collection and definition as further aspects of vocational education and training are more clearly delineated.

As a result, the chair of COTTS noted in his report to VEETAC that, while the proposed set of initial key performance indicators will be useful, COTTS saw the need for major extension and enhancement. However, the task of specifying a more complete set of key performance indicators is severely hindered by:

- differences over the perceived objectives of TAFE which underpin performance indicators, or at least uncertainty as to who should specify these objectives; and
- differences relating to the boundaries of TAFE; for example should it include the operations of subsidiary companies, or overseas activities, or non-TAFE organisations providing TAFE courses?

There is also a need to develop indicators for TAFE that permit international comparisons of efficiency and effectiveness with comparable sectors in other countries. These difficulties will be increased as the data collected under the auspices of COTTS becomes a better reflection of Australia's total training effort.

Chapter three: State and Territory initiatives in developing performance indicators

This chapter contains information regarding the key performance indicators agreed by ACTD in 1988. In addition, other indicators which have been developed and used by individual States/Territories are discussed, together with information about the processes involved in their development, collection and use. Information on the mechanisms used to collect and report the key performance indicators is presented in Appendix 2. However the discussion relates principally to those indicators and processes used at the State/Territory level rather than the college level. It has not been easy to establish what is happening at the college level across Australia, although this is of critical importance to improving the management of TAFE's resources and the management information available at the college and higher levels of aggregation.

The present chapter draws heavily on letters and/or accompanying documentation provided to the Centre by individuals or groups within State/Territory TAFE agencies. These, in themselves, provided some useful insights into the concepts behind the development and use of performance indicators. In addition, visits were made both to Queensland and New South Wales, two States at the forefront of indicator development and use.

Victoria, Tasmania and the Northern Territory[3] have undertaken relatively little development to date, although the issue is receiving significant attention in Victoria at present. Those States/Territories who have made significant progress in the development of performance indicators and systems include Western Australia, New South Wales, Queensland and South Australia. Because of its size the ACT Institute of TAFE is a useful model of a large multi-campus but single institution. Nevertheless it has a considerable history in the development and use of performance indicators.

The developing States/Territories

Northern Territory

The Northern Territory noted that the list of performance indicators endorsed by ACTD in 1988 has had little usage there. This was said to be due to unreliability of data provided by the sources; however it was felt that improved training in the gathering and use of such data in 1990 and 1991 should see the data provision and entry procedures improved to the stage where some indicators can be used reliably.

It was suggested that the Northern Territory is in the situation where approximately 50% of its TAFE enrolments are in the disadvantaged category, are in small rural communities, or are of Aboriginal or Torres Strait Islander descent. Many of the standard performance indicators are therefore seen as difficult to use, or meaningless. For example, most of TAFE 'courses' available to Aborigines are short (4-16 hours) and reflect community-based educational/literacy requirements rather than being longer, accredited and industry-related training courses. Therefore the use of some indicators is fraught with problems. Smillie (1990) has produced a short discussion paper on performance indicators and their relevance to the delivery of Aboriginal programs in TAFE. It stressed the need for the development of agreed indicators to be used as a formative test to guide TAFE's programs towards the achievement of desired outcomes. They therefore need to be culturally sensitive and relevant, and may be different from mainstream indicators.

In the last 18 months those responsible for gathering statistical information in the Northern Territory have been concentrating on persuading the colleges, and especially the adult educators in remote communities, to supply (via enrolment, course and staff forms) all the information which will enable some of the key indicators to be extracted, and even used. Consequently, colleges have this year been able to extract details on Annual Student Contact Hours (ASCH) per staff member, ASCH per remote community etc. Performance indicators are also proposed in the funding model suggested for the Northern Territory (see Nagel 1991 and Chapter 4).

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[3]. The TAFE National Centre recently ran workshops on performance indicators for staff in both the Northern Territory and Tasmania.

At present much of the data needed to obtain performance indicators is collected in the form of various lists (student lists, lecturer contact hours etc.) and is form-based. The information is collected by the regional or college office for computer processing and is used at the regional or college level. Much of the information gathered requires lecturer input. Information is also collected about room occupancy.

Tasmania

Tasmania, too, reports that it has made relatively little use of performance indicators up until now. It has, however, undergone major changes, being transferred from the Education Department to become a section (the Division of Training) within the Department of Employment, Industrial Relations and Training.

The above changes have initiated a major reassessment of information needs within the Training Division and the wider department. Officers involved in planning new management information systems suggest that computerised systems to assist the personnel and financial functions of the new body will be developed. The introduction of these changes means that it will be possible to interlink student, financial and staff databases. These changes should allow a greater use of performance indicators (particularly efficiency indicators) which in the past have not been used to full effect.

Another factor which will result in a greater use of efficiency indicators is the introduction of:

- a system of program budgeting within the Training Division (still in the planning phase); and
- a fee system based on the number of contact hours attached to subjects, and usually calculated using the course's position within the stream structure (implemented in 1991).

Tasmania's main performance indicators are:

- examination pass rates;
- sat examination rates; and
- annual graduate numbers.

Tasmanian TAFE officers suggest that, to date, their use of these indicators has been limited to creating specialised reports for individual officers within the division or department. There is no widespread system of formal publishing of effectiveness or efficiency indicators.

Given the acceptance by the ACTD of an agreed set of performance indicators, the respondent from Tasmanian TAFE felt that any new computerised systems of reporting will have to incorporate systems for keeping and reporting on the full range of accepted indicators. Financial planning is now carried out at the sub-program level; it was however reported that a timeframe for development and implementation of the new personnel system has not been developed.

It was suggested that moves to a fee-based system this year and the indication of a program budgeting scheme should force a greater use of efficiency indicators.

Tasmania has collected information on *unmet demand* undertaken by colleges responding to a survey from central office. Within the college, departments fill in the questionnaire, the information is collated and returned to central office for processing by the statistics officer. The information is tabulated at course level and a report is prepared by the statistics officer for the Commonwealth. Unmet demand is grouped by stream and areas of priority.

In addition Tasmania offered comments on a range of other indicator categories. This information is reproduced under appropriate headings below.

Financial indicators

While individual managers make use of financial information, it cannot be said that there is any true indicator involved at the present time. It should be noted that with the introduction of a full system of program budgeting, financial indicators such as *actual vs budgeted expenditure* and *cost per student hour* will become major indicators.

Student indicators

While graduation rate for courses is currently used as an indicator, as yet no data are collected on *student satisfaction* or *student destination*. While the roles for the various sections within the new department have yet to be finalised, it would seem the Research Branch may use student destinations in some of its future studies. It should be noted that such studies are likely to be limited to a relatively small scale with small groups of courses being targeted. Given the current state of flux within the department the question who will carry out such studies still exists, and to what extent, if any, destination and satisfaction emerge as worthwhile indicators.

Access and equity indicators

Currently enrolment data and graduation rates are used to monitor female participation in courses. The same is true for Aboriginal groups. From 1991 onwards participation by ethnic groups will be monitored.

Business activity indicators

Given the introduction of fees for courses for the 1991 academic year, it is envisaged that income generated will become a major indicator for the Training Division.

Staff indicators

While the staff development section keeps rudimentary data on costs of programs and money spent across colleges, nothing exists which could be said to be a true indicator. As noted above, new systems are being planned which will enable the interlinking of financial and staff databases. When this occurs it will also be possible to incorporate the staff development database with these, or at least, given the emerging capacity to download information, to link databases. With their development, the possibilities for creating a whole range of indicators will clearly emerge.

Client indicators

The Quality Assurance Branch undertakes, on a very limited scale, surveys of some client groups. These attempt to ascertain client satisfaction. However at this stage of the reorganisation process there is nothing being used by that branch which could be said to be a true indicator. It does seem likely that in the future, survey work will be expanded;

however it is not yet known what indicators, if any, will be used. The Curriculum Branch also undertakes informal assessment of client needs on an ongoing basis but do not use anything which could be described as an indicator.

Facilities' indicators

While room utilisation rates are used within colleges for planning purposes there is no use of such facilities' indicators on any wide scale. The Physical Resources Section makes use of such rates on a limited basis for individual building projects, but again the usage could not be defined in any way as using indicators.

Victoria

The Victorian State Training Board (STB) reports that one of its major focuses has been to improve efficiency and effectiveness throughout the State's training system. In pursuit of this aim, the STB has developed and implemented structures, processes and procedures to manage the improvement of performance across the State Training System (STS). These include:

- a **planning/budget** process which on an annual basis relates resource allocation to the achievement of specific goals and objectives;
- **performance agreements** between the STB and individual colleges, developed as a result of the planning/budget process. These agreements detail specific targets to be achieved against identified funding allocations. Performance measurement and monitoring are concentrated on direct measurement of achievement of targets. Each college is therefore expected to establish a review and evaluation program. Performance agreements have become a legislative requirement with the implementation on 1 January 1991 of the *Vocational Education and Training Act 1990;*
- **management plans** have developed by each college on an annual basis. These plans encompass all activities undertaken by the college for the year of operation and identify objectives, implementation strategies and outcomes. Management plans are also a legislative requirement from 1 January 1991; and
- **performance measurement** processes (including performance indicators) which directly measure achievement of targets and monitor the implementation of performance agreements and management plans.

The introduction and use of performance indicators in Victoria is dependent on the development and implementation of an integrated set of databases which can be linked to provide comprehensive information to serve monitoring and planning purposes. Development of such a system commenced in 1990. Continued development and progressive implementation will continue during 1991.

The State Training Board will pursue further development of key performance indicators by undertaking a major redevelopment of corporate information systems and by participating in the national review of TAFE statistics being undertaken by COTTS. Already a number of the indicators are in place (see Figure 2.1).

A project is underway to develop a corporate data model. (Such projects have been undertaken elsewhere, notably in Western Australia, South Australia and Queensland.) The project will result in the redevelopment of all information systems and the adoption of a set of standard performance indicators.

However, other indicators not currently in use (e.g. student destination and client satisfaction) will be developed for use in 1992, drawing on the work and experience of other States/Territories and the TAFE National Centre. College directors in Victoria had identified such indicators as being very important.

Data on subject completion and pass rates are not presently gathered centrally, although colleges have been notified that recording those students who are still active in their course at the end of their enrolled program would be required. The college directors have noted the need for some form of completion index (e.g. course/program completion rate) although work will be required both at State and national levels to define this indicator properly. Holmesglen College of TAFE is presently conducting a study on behalf of the State Training Board into the measurement of completion and enrolment. The project will develop a suitable definition of completion for TAFE. It also includes case studies conducted in a number of colleges to review current procedures for recording completion, limitations of databases as well as a trial of amended systems. This study will report at the end of 1991.

Without the measures mentioned above, the system has few, if any, measures of education output and quality. Victoria has concentrated so far on the development and use of financially-based efficiency indicators.

At present the efficiency of course delivery is examined by the analysis of financial statistics. Victoria has been particularly active in the development of such indicators. Comparison of unit costs between institutions of similar characteristics provides indications of possible areas of difficulties, rationalisations, savings and/or the need for alternative strategies. Indicators of efficiency reported as useful, include cost/student contact hour, student hours/teacher hours (indicator of average class sizes) and cost/teacher contact hour. Nevertheless it was recognised that variation between providers can be due to a number of factors, including staffing profile, college location, staffing work loads and efficiency.

At present a range of other performance indicators is used. These include:

- **staff indicators** (effective full-time teaching/non-teaching and permanent teaching staff/contract, sessional staff);
- **financial** (e.g. actual vs budgeted expenditure, and a range of others generated from financial statistical returns);
- **access and equity** (negotiated targets achievement); and
- **business operations.**

The **staff-based indicators** are associated with financial expenditure - salaries and on-costs. They use a time series to give an effectiveness measure, and may be specified as a performance target for use as an efficiency measure. Information on the teacher EFT/non-teaching is gathered by the College Budgets and Performance Monitoring Section (CBPMS) of the State Training Board's (STB) Resources Management Division. It uses the annual statistics and finance collections. As yet unpublished, it is used in budget discussions with colleges. The latter indicator (permanent vs contract/sessional staff) is collected and reported by the CBPMS to Treasury monthly. The information is used internally in budget discussions, but it may also be published in reports to the Victorian Parliament.

Financial indicators are collected by CBPMS and by the Department of Budget and Review. They are used internally and for budget discussions. They may be reported to the Minister.

The **access and equity indicators** examine the extent to which targets negotiated with colleges have been achieved. The information is collected by the Social Justice Branch of the STB and the information is reported in the form of tabulations to the STB's Social Justice Committee, to the STB and the Minister. It is an internal indicator. Other performance agreement targets are similarly monitored when set (e.g. for Aboriginal programs and specific migrant programs).

The **commercial activity indicators** are based on a series of negotiated targets in the annual performance agreements of colleges. The indicators are for internal use and involve both colleges and the Business Development Branch of the State Training Board. The indicators include:

- industry-funded training [illegible] a percentage of recurrent income;
- level of activity provided to industry in the priority economic sectors referred to in a publication which outlines the economic priorities of training for Victorian industries. These are divided into low, medium and high priority areas. Those with a high priority include aerospace, heavy engineering, oil and gas, packaging, telecommunications equipment and textiles. Those with a medium priority include clothing and footwear and printing. Those with low priority include business, finance and property services, construction, community services, retail and wholesale and public administration;
- number of permanent staff who (1) have received staff development specific to industry-funded learning and (2) have participated in industry-funded learning services; and
- the number and increase in co-operative projects undertaken with other colleges in industry-funded fee-for-service activities.

The more developed States/Territories

Several States have been prominent in the development and use of performance indicators. These States are Queensland, New South Wales, Western Australia and South Australia. In particular Western Australia and South Australia provided useful background information for this report about their use of performance indicators.

Western Australia

The development and use of indicators within the Western Australian Department of TAFE has had a relatively long history. As Goldsworthy (1988c) described it:

> The development of performance indicators in TAFE Western Australia has been driven by a subtle blend of external government pressures and internal organisational imperatives. Public sector managers now wax eloquent on the merits of strategic plans, human resource management schemes, management information systems and corporate plans. We all have had to learn to work with an interventionist government intent on managing the changes it wants introduced.
>
> One of the key cudgels in this process is a revamped Financial Administration and Audit Act (FAAA 1986). Through this act it has become mandatory for all public sector bodies to develop corporate plans and to report on progress in achieving plans by using previously agreed performance indicators. These indicators must show that the resources of an organisation are being used efficiently and effectively.
>
> (Goldsworthy 1988c, p.2)

Henderson (1987a) was also one of the earliest writers in the area of TAFE performance indicators. This early paper also needs to be seen within a broader context of college-based self-evaluation and educational audits (Henderson 1987b). In addition, Hastings (1988) has noted a series of concerns and issues relating to the performance indicators proposed or in use in Western Australia.

At present, the development, monitoring and maintenance of performance indicators is the responsibility of officers within the Corporate Planning Unit with the Department's central office. Staff in this unit have been commissioned by the TAFE National Centre to produce and pilot a survey of student destination. The project will be completed later this year.

Western Australia noted that:

- the development and use of performance indicators has been mandated in the WA Public Sector by the Financial Administration and Audit Act (FAAA) (Treasurer's Instruction 904). The act distinguishes between indicators of workload, efficiency and effectiveness;
- the framework for the use of performance indicators is also stipulated through the implementation of program budgeting and management in the state public sector. This follows similar lines to the program management structure employed by the Commonwealth Public Service. Government policy objectives are used to structure TAFE's activities into discrete programs, i.e. skills formation or equity and access. The structure provides a hierarchy of levels from a broadly defined program at the top, to a very specific component of activity at the bottom. The result, as each level branches out from the one above, is a pyramid structure; and
- the program management structure for TAFE is currently under revision. The revised structure will allow effective vertical tracking of resources and outcomes from the macro policy level to the lowest operational level. For example a tracking sequence in the Skills Formation Program (level 1) could be: para-professional sub-program (level 2) - engineering field of study (level 3) - certificate level (level 4) - Certificate course in Advanced Welding (level 5). As each program and sub-program has defined objectives and annual outcomes specified, there is a firm structure on which to anchor the performance indicators mandated by the FAAA.

To date, the performance indicators used in Western Australia have been limited to a small number of efficiency indicators (the sit & pass exam indicators are considered to be efficiency rather than effectiveness measures) specified in college resource agreements. Based solely on workload and efficiency indicators, these particular indicators gave a very narrow picture of college activities. In addition, sections of the Western Australian Department of TAFE dealing with specific student groups such as Aborigines, migrants and the disabled, maintain separate databases and construct and report their own performance indicators and are usually related to the requirements of the (Commonwealth) funding source (cf. the National Aboriginal Employment Strategy or the Adult Migrant Education Service).

However TAFE has developed a series of draft key measures which will be regularly monitored. Work-based teams will be established to improve performance.

In many of these areas the first task will be to collect good base line data. Having determined this base line, realistic targets can then be set. In the interim, indicative targets based on a percentage improvement on current levels of performance have been proposed, including:

- course and subject completion rates;

- number of people from disadvantaged groups accessing TAFE courses;
- movement towards more innovative delivery approaches for curricula;
- movement towards more courses developed to reflect competency-based training and modular approaches;
- increases in the number of staff undergoing staff development; and
- increases in the number of staff involved in such services as labour market programs and industry-funded training.

Finally, the Western Australian Department of TAFE is in the process of developing a new and integrated TAFE Learning Management System (LMS) (see Lloyd 1990). As a result of this development a new range of effectiveness indicators based on student outcomes and analysis of student academic behaviour have been proposed.

One of the components of the TAFE LMS is the Student-Based Evaluation System (SBES) which will provide for the use of performance indicators in college self-evaluation and accountability. Under the provisions of the SBES course coordinators at college level will prepare annual or biannual course status reports (CSRs) which will form the basis of internal management and external reporting. The introduction of the CSRs is linked with the development of the new TAFE management information system which is currently at the data-model stage.

The course status reports will provide direct feedback from student surveys and also indirect indicators of student academic behaviour. In the CSRs, course coordinators will be required to address the indicators reported and indicate appropriate recommendations for refinement of their course structure, content and delivery.

Under the proposed SBES direct student feedback would be sought at four points and incorporated into CSRs:

- on application to enter course (application form);
- on entry to the course (sampling surveys);
- after completion of specific stages or core subjects (sampling surveys); and
- after withdrawal or graduation (all individuals surveyed).

The number of the indicators proposed to be included in the CSRs are outlined on page 19.

Western Australia reported that it uses a further indicator to those outlined Figure 2.1 and discussed in Appendix 2. Information on **female-enrolled hours** is collected using the student data system and constituted as a formal performance indicator. It is reported in the department's annual report in compliance with the requirements governing performance indicators under the Financial Administration and Audit Act (FAAA). Targets for these indicators have previously been set in college resource agreements, although the audit of the 1989 agreements cast doubt over the value of such indicators, given the manner in which they were set and reported. Indeed the acting Auditor-General of Western Australia pointed out that, although submitted, the performance indicators for the Department of TAFE had not been audited for the 1989/90 financial year.

As a result of experience using performance indicators in the 1989 and 1990 resource agreements, the following directions have been set by TAFE in Western Australia for further refinements. These refinements include:

- the further clarification of the relationship between specific performance indicators and corporate goals;
- improving the construction and reporting of performance indicators in order to maximise their value in decision-making at the college level; and
- developing a 'basket' of indicators, including effectiveness measures based on student outcomes, to give a more complete view of college operations.

Those proposed include:

- application ratio (1st. preference/places offered) - all full-time and part-time students. It is (to some extent) a measure of unmet demand, and looks at the applications received against available places;
- good standing ratio, that is, the number of students who trigger default conditions in the Learning Management System/Total No. of Students;
- graduation ratio (rolling 3 year average);
- graduate/student satisfaction index;
- cost per graduate; and
- cost per student (all full-time and part-time).

All these indicators would be calculated to show a current value and the percentage variation on the average for the previous three years.

South Australia

In 1989 the Department of Employment and TAFE released a discussion paper on performance indicators (DETAFE 1989). This paper drew, in part, on earlier work by the TAFE National Centre (Guthrie et al. 1986, 1988, Guthrie 1988). The paper was prepared under the auspices of the Planning and Program Management Committee (PPMC). The introduction of performance indicators is seen as a mechanism for assessing and improving 'quality' in the South Australian TAFE system. As the (then) Chief Executive Officer's letter to all TAFE staff pointed out:

> This is your opportunity to help shape the ways in which TAFE will account for its own performance in engendering quality learning. This is your chance to contribute to an important new management process within the TAFE system. This management process will focus on the performance of schools, colleges and divisions - not on the performance of individuals, as performance appraisal will remain the responsibility of college and divisional staff and be a local management function.

A wide range of meetings with staff and special interest groups was sponsored to provide an opportunity for all those in the TAFE system in South Australia to understand and participate in the development of new approaches to college and system management and accountability, and their associated performance indicators. In 1990 a performance indicators training kit (DETAFE 1990), incorporating videos and text, was developed and released to assist this process.

A recent Centre project (Guthrie and Loveder 1990) highlighted problems in accessing and processing student-based data, particularly in relation to obtaining reasonable measures of student progress, attrition and completion. DETAFE however was already well aware of these problems and has been working to create a series of new and better integrated databases as well as improving the quality of data captured at the college level.

The South Australian Department of Employment and TAFE is implementing a program of performance indicators to meet several needs. These include:

- provision of better management information to college-based managers;
- provision of appropriate tools for internal accountability purposes;
- provision of a 'management overview' to the Chief Executive Officer; and
- provision of improved public information for external accountability purposes.

The development of performance indicators is seen as a key step in the introduction of performance-based management practices throughout the department. The prime consideration is to give college-based managers information which will:

- assist them to plan and manage better;
- provide motivation and encouragement in the use of performance management tools and concepts;
- provide tools which will assist management units across the department to compete for resources on an equal footing, and to reference resource bids directly to client need; and
- provide tools which will assist managers to account for their use of resources.

The method proposed for developing indicators in South Australia will be discussed shortly. The Department of Employment and TAFE in South Australia has noted that the process of delivering centrally collated data to management units within colleges in a form useful to field managers and planners has provided incentive for college-based personnel to identify errors in data and weaknesses in data collection processes, and to introduce new processes to improve the quality of the data. As the quality of data improves, so does the sensitivity of the purposes to which it can be put. So far, known weaknesses in existing data have precluded the inclusion of 'ratio' type data in the distributed primary management data. However, it is planned to introduce these types of indicators in the near future.

Thus no information is presented on the availability of indicators in Figure 2.1 (see p.9 of the report) for South Australia. (Neither is any information presented in Appendix 2.) However, data items and terms from which each of these indicators can be constructed are routinely collected within the department and widely distributed for use in internal management processes - particularly the planning of educational delivery, resource allocation and accountability. Detailed work is in progress to improve the quality of these data items and to encourage their use. However the indicators in Figure 2.1 are not formally constituted as departmental performance indicators.

It was reported that the devolution of management responsibilities from central office to the field in South Australia will lead to the development of a series of performance indicators which have arisen from the field. Agreed performance indicators will be negotiated and used as a basis for resource allocations to colleges and performance agreements between college directors and the Chief Executive Officer. The development of 'performance indicators' is seen by South Australian TAFE as a key step in the introduction of performance-based management practices through the department.

Consistent with this policy of devolution of management responsibility, and to gain maximum commitment to the use of performance indicators, the responsibility for selection of performance indicators for each management unit rests with the management of that unit. Guidance in the principles of performance indicators is provided by a unit in the Planning and Systems Division in central office. These principles are grounded in a planning and management model which is based on the identification and satisfaction of client needs.

However, different units within DETAFE in South Australia have different client bases. It follows that the performance indicators in use across the department vary from one management unit to another. (Indeed a study is presently underway to investigate the performance indicators which might be used most appropriately in the student services area.) Nevertheless, especially within college-based units, there is considerable commonality. Those items of management data which are seen as most useful, and which can be provided from central data collections have been identified, and are presented annually to managers across the department as an integrated set of departmental 'primary management data'. Individual managers are free to choose which items (if any) from this set they will use, and are free to use their own indicators where they judge this to be appropriate.

The primary management data are collated by the Planning and Systems Division in DETAFE's central office from data drawn from a number of resources:

- demographic data are taken from the Australian Bureau of Statistics (ABS) and from the SA Department of Environment and Planning;
- industry data are collated by each program management group (PMG) for their own area of responsibility. Criteria have been developed with the assistance of the Labour Market Analysis Branch of the Department of Employment and TAFE to guide PMGs in this task;
- facilities data are drawn from the Department of Housing and Construction who have surveyed each departmental site. Some of these data are out-of-date, and methods for keeping the data timely and accurate are currently under investigation;
- staffing data are drawn from the payroll system;
- expenditure data, summarising all financial transactions made by the department, are drawn from the financial accounting system. These are generated from the records of financial transactions made by cost centres across the department;
- student enrolment, student outcomes, teaching and class data are drawn from an integrated student and staff activities system. The data in this system are collected annually from college compiled records such as class registers and roll books; and
- techniques for gathering client satisfaction data have been developed by the TAFE National Centre for the SA Department of Employment and TAFE (Hayton et al. 1991). It is anticipated that colleges will routinely survey current students in the latter period of the course they are currently undertaking, past students (graduates and non-completers) PMGs will gather information on the degree to which industrial clients perceive their needs to be met. Fee-for-service activities may also be surveyed using this process.

Managers who wish to use performance indicators which fall outside the primary management data are responsible for collecting or collating the necessary information.

As indicated above, performance indicators in South Australian TAFE are regarded as tools primarily for use in management of units to which those indicators apply. Accordingly, Planning and Systems Division in central office annually analyses the primary management data:

- by college;
- by program within a college;
- by teaching area within a college;

and

- by program;
- by college within a program;
- by teaching area within a program; and
- by teaching area within a college within a program.

These analyses are then directed to the relevant colleges and PMGs for distribution to the managers of the units concerned.

The interpretation and subsequent reporting and use of this information is largely at the discretion of the management of each unit. It is anticipated that this information (available for the first time in 1990), will be used as a basis for educational planning, budget negotiations, negotiation of performance agreements and subsequent accounting for resources and performance.

It is anticipated that, from 1991, the analyses to 'program by college' and 'college by program' level will be made widely available throughout the department in a form which gives a management overview of educational and fiscal performance.

Queensland

Queensland has shown considerable interest in the development and use of performance indicators for some time now. The publication produced by the Program and Strategic Review Branch of the Queensland Treasury, *Making results matter: guidelines* for the development of performance indicators (Queensland Treasury 1990c) stresses the value of indicators for a range of individuals and groups, including:

- staff;
- individual managers;
- senior management;
- central agencies;
- ministers;
- clients; and
- Parliament and the public.

Other publications in the series (Queensland Treasury 1990a, 1990b) advocate a system of program management (The Bureau of Vocational and Further Education and Training (BEVFET)[4] has responsibility for 6 programs.) based on strategic planning, performance indicators and periodic program evaluations. These processes are reflected in the structural organisation of the bureau. Moreover BEVFET is undergoing a process of devolution and regionalisation. The promotion of quality improvement processes is also an important feature of the bureau's current thrust.

Queensland TAFE has a number of groups spread across 3 of BEVFET's divisions which have an interest in the development and use of performance indicators. These are the:

- Branches of Institutional Review and Development, Program Evaluation and Standards Review and Operational Audit Services within the Division of Operational Performance;
- Planning and Analysis Branch within the Division of Planning, Technology and Innovation; and
- Educational Research Branch within the Division of Research and Learning Strategies.

Their roles are described below. In addition, a series of issues was identified as a result of my visit to Queensland and discussions with officers from these groups.

The Division of Operational Performance is responsible for assisting all sections of the department to achieve sound managerial control over departmental activities, to ensure that programs are appropriate and that they are delivered efficiently and cost effectively.

This role is carried out by:

- monitoring the effectiveness and efficiency of departmental services and operations independently of unit managers;
- maintaining a quest for excellence in program management and administration throughout the department;
- responding to and advising senior officers on needed changes to services, structures and administrative procedures;
- evaluating college and selected private provider courses and programs;
- reviewing standards achieved in departmental and privately provided programs; and
- assessing and accrediting courses.

Within the division, the *Institutional Review and Development Branch* is responsible for:

- planning and conducting external institutional evaluations;
- developing performance indicators;
- developing strategies for institutional self-evaluation;

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[4] Note that since this section of the report was prepared The Bureau of Vocational and Further Education and Training (BEVFET) has undergone restructuring which, in turn, has affected the currency of the report.

- reviewing the processes and outcomes of self-evaluation; and
- investigating specific organisational problems.

The institutional evaluations are used to review institutional goals and assess the institution's ability to meet its agreed goals. In addition, the review process, whether conducted internally or externally, is designed to encourage institution self-development and improvement. It also provides a mechanism for demonstrating the efficiency and effectiveness of the institution and the service it provides to appropriate audiences. Guidelines and policies have been developed for conducting reviews (Institutional Review and Development Branch 1989a). In addition publications has been produced which are concerned with:

- external reviews (Institutional Review and Development Branch 1988a, 1989b); and
- institutional self-evaluation (Institutional Review and Development Branch 1988b, 1990).

Their processes draw, to some extent, on the work on institutional evaluation by Byrne et al. (1984a, 1984b).

The role of the *Program Evaluation and Standards Review Branch* includes the following:

- evaluation of the overall provision of vocational educational and training programs in the context of current and future needs and social, structural and technological change;
- evaluation of the effectiveness of the relationship between the expectations of industry and the wider community and the provisions of educational and training opportunities;
- review of student assessment policies, processes and practices; and
- review of the development of vocational skills and the extent to which graduates acquire the competencies intended by the program designers and which are needed in their employment.

In particular the branch is concerned with evaluating the effectiveness and quality of programs offered both by the department and private providers. However, its primary concern is to evaluate the expectations of industry and the wider community in relation to the educational and learning opportunities being provided. The aim of this evaluation process is the improvement in the standards and performance of the vocational education and training system.

Finally, the *Operational Audit Services Branch* has as its major tasks the:

- internal audit of departmental and institutional financial systems;
- assessment of the effectiveness of departmental programs against specified criteria; and
- provision of a consultancy service to management with regard to systems operation, organisational structure, efficiency reviews and effectiveness audits.

It is therefore concerned with conducting financial and compliance audits, together with audits of efficiency and program effectiveness.

The division reports to the Director-General and the Minister.

The **Planning and Performance Analysis Branch** is involved in collecting a range of performance information and data and conducting a first pass analysis of these data and information. Others (for example branches within the Operational Performance Division) conduct more detailed analyses of the data and information. The branch co-ordinates the production and analysis of individual college and divisional development plans. These plans include strategic targets and other indicators. Examples of key performance target areas include:

- utilisation of physical capacity;
- full-time teacher utilisation (teacher contact hours/full-time teacher);
- proportion of recurrent expenditure raised from external sources by colleges; and
- cost per student contact hour.

Other reports relating to operational efficiency are published (BEVFET 1990). They relate inputs to outputs and are generally quantitative, comparative measures of service delivery and unit costs. These permit a range of performance indicators to be developed and consolidated at the State and college levels. Efficiency indicators used include:

- net and gross recurrent cost/student contact hours for all streams;
- average class size for all streams (defined as the total student contact hours/total teacher contact hours);
- average annual contact hours/full-time teacher (comparative data are also provided between years 1988-89); and
- student contact hours/seat for all streams (facilities use).

Other indicators include enrolment growth rates in both full- and part-time modes, and student contact hours, the percentage change in teacher contact hours and the ratio of full-time to part-time teaching hours. All of these data are expressed at the college level and can be used for comparative purposes on an institutional or yearly basis (i.e. comparing 1988 with 1989 data). However it is acknowledged that the data gathered concentrate heavily on efficiency measures. Moreover, it has been noted (see BEVFET 1990b, p.23) that:

- valid comparisons can only be made between colleges operating at similar levels of output;
- new colleges, smaller colleges and specialist colleges will generally have higher operating costs;
- non-practical classes (e.g. management) generally have lower operating costs; and
- efficiency performance measures only indicate activity levels. Further analyses of exceptions are necessary before any qualitative judgements and decisions can be made.

This indicates the potential difficulties which might be caused by the uninformed use of performance indicators.

The branch is also concerned with gathering data and other information which reflect elements of the quality of outcomes and service, including graduate destination surveys (Weeks 1990), unmet demand (BEVFET 1990a) and student satisfaction (using a questionnaire to the previous year's graduates which is distributed, processed and reported by State Office). Such studies are used to help to judge the effectiveness and quality of the organisation. Indeed there is a significant interest in issues of quality and its measurement for improvement purposes in Queensland.

In addition, information on staff salaries and training is being compiled using ABS training survey forms. These data are being collated and will be reported by State Office.

The **Education Research Branch** has had a relatively limited role in the development of performance indicators. It provides a consultancy service to the branches and bodies; it monitors work being conducted elsewhere and acts as a clearinghouse for this information. Recently it has been studying the use of performance indicators relevant to distance or off-campus provision.

New South Wales

New South Wales, like many other TAFE agencies, lacks systems which provide useable, timely and accurate management data and other information for a range of levels within its organisation. However the responsibility for the collection, processing and reporting of performance indicators falls to the Corporate Planning Division. Information provided by the Division of

Information Systems and other bodies within the corporate structure provide much of the data necessary for calculating a range of performance indicators.

Like Western Australia, TAFE in New South Wales is required by an act of Parliament to report on its performance. The current processes and systems being developed and progressively implemented will ensure that performance can be measured against determined objectives and outcomes.

In the NSW public sector generally, management information systems, performance measurement and customer consultative processes are still in a developmental stage. For such a large State as New South Wales, the challenge for TAFE is to create an integrated planning, performance monitoring and reporting system to meet a range of internal and external needs.

At present considerable effort is being put into the development of management information systems; financial, human and administrative, to support the collection, processing and evaluation of performance data. This integrated system will assist managers at the local level to use indicators to plan, monitor and evaluate their performance. The aggregation of local data will meet corporate planning, performance and reporting needs.

The Corporate Planning Division has a co-ordinating role in collecting, processing and reporting corporate performance indicators and actively supports colleges, networks and training divisions with the development and collection of local indicators.

In 1990, NSW TAFE collected and reported 13 corporate performance indicators. The indicators were collected primarily to meet annual reporting requirements and to provide TAFE's executive staff with an overview of the organisation's performance at a global level. Listed below are the performance indicators reported in the 1990 NSW TAFE Annual Report:

- **Graduate numbers** - number of students in major award courses who were eligible for an award. Reported by faculty and school and for selected courses in 6 Industry Training Divisions (ITDs);
- **Course completion rates** - number of students enrolled in major award courses over number who completed over 4 year period. Reported for selected courses in 6 ITDs;
- **Average subject completion rates for courses** - number of students who enrolled in subjects in major award courses over the number who completed. Reported for selected courses in 6 ITDs;
- **Community participation rates** - percentage of selected populations 15 years and over who participate in TAFE. Reported by State, metropolitan/country, and by age and gender using data extracted from ABS census data;
- **Enrolment rates for targeted groups** - percentage of enrollees from targeted groups such as women, nonenglish speaking background and unemployed youth. Reported by faculty and educational program;
- **Cost per student contact hour** - total salaries and consumables expenditure over number of student contact hours. Reported by school;
- **Student satisfaction with course content and delivery** - survey of current students enrolled in selected courses in 6 ITDs;
- **Graduate satisfaction with course content and delivery** - survey of recent graduates from selected courses in 6 ITDs;
- **Graduate employment and further training outcomes** - survey of recent graduates from selected courses in 6 ITDs;
- **Industry satisfaction with training** - survey of selected industry representatives in 6 industry groupings;
- **Staff attrition rates** - for permanent employees only. Extracted from personnel records;
- **Days lost per 100 staff due to industrial disputes** - for teaching staff only. Extracted from personnel records; and
- **Percentage of salaries and wages spent on training** - extracted from general records.

To continue the development of the system in 1991, all colleges, networks and training divisions will be required to monitor and/or collect a standard set of local performance indicators. These indicators are consistent with the organisation's overall objectives and are directly linked to performance objectives, outcomes, and targets specified in individual college, network and training division management plans. By integrating the monitoring and reporting of indicators with the management planning process, indicators will assist managers at all levels to plan, monitor, evaluate and improve their performance and services to students.

Listed below is the set of local indicators to be monitored by all colleges, networks and training divisions in 1991:

- **Student satisfaction** - all colleges administer survey to a sample of students;

- **Subject completion rates** - reported by subject for each college, network and training division;
- **Subject retention rates** - reported by subject for each college, network and training division;
- **Average subject completion rates for courses** - reported by course for each college, network and training division;
- **Enrolment rates for targeted groups** - reported by targeted group for each college, network and training division; and
- **EEO data** - report format yet to be determined.

In 1992, the set of local indicators is likely to be expanded to include:

- actual versus budgeted expenditure;
- graduate employment and further training outcomes;
- industry satisfaction with training;
- non-completing students' perceptions of TAFE; and
- cost per student contact hour.

While the development and use of indicators may lead to a better correlation between plans and outcomes it was acknowledged that it is difficult, initially, to set reasonable and meaningful targets. Moreover, those providing data to the system needed to be persuaded of the benefits to be gained by improving the quality of data and other information gathered.

The ACT

In a brief paper, *Reporting key performance indicators to government* the ACT reported that it is developing a range of key performance indicators as an integral part of the ACT budget process. This process requires all ACT government agencies to report on performance against nominated indicators for each program. These are published each year in the ACT government budget papers. Performance indicators also form an important part of the ACT Institute of TAFE's business planning process.

The indicators include:

- access - knowledge of courses, accessibility to facilities and entry to courses;
- participation - numbers and mix of students, including those presently disadvantaged;
- successful educational outcomes for students;
- quality and diversity of courses;
- responsiveness to the economic and social needs of the ACT community;
- collaboration with other ACT education, training and industry agencies in pursuit of common goals, and in relevant national endeavours; and

- achievement of objectives within budget.

Key performance indicators are specified to government within three sub-programs:

- education delivery;
- education services; and
- corporate services.

These indicators are essential to the Institute's mission to 'develop a skilled and flexible workforce'. (Outlined in Appendix 4.)

As indicated in Figure 2.1 (see p.9) the ACT also has systems in place which make use of all the effectiveness and efficiency indicators listed for comparison, at the national level. These indicators, and other variations used by Commonwealth government agencies (such as the Department of Finance and the Grants Commission) rely totally on the validity and accuracy of the nationally collected 'selected TAFE statistics'.

As part of its ongoing analysis of selected TAFE statistics over some five to six years, and in its submissions to the Commonwealth Grants Commission Inquiries, ACT TAFE has attempted to compare and contrast its operations with other States/Territories. Such analysis has, however, been frustrated by the inconsistent collection methodologies and by consequential unreliable data for some States in the national collection. Other States have also been attempting such analyses.

Even without considering important questions relating to the objectives of TAFE and its as yet undefined boundaries, the above comments serve to illustrate the degree of caution to be observed in the development and use of performance measures in both intrastate and interstate analysis. All of these issues are to be addressed in the VEETAC sponsored national management information and statistics system project described in Chapter 2.

Notwithstanding the difficulties, ACT TAFE is attempting to establish international benchmarks, or performance comparisons, with comparable tertiary institutions and systems in other countries, e.g. New Zealand and the USA. The increased marketing of TAFE courses off-shore - especially through full fee paying overseas students - makes such international comparisons increasingly important.

Performance indicators in use

While there has been considerable attention given to the how, the why and the wherefore of performance indicators there are surprisingly few examples which can be cited of their practical use. Moreover the majority of the information that can be readily collected is at the State/Territory rather than the national level. It also relates particularly to the selected national key performance indicators and other available information, all of which can be used by TAFE central offices in their dealings with colleges and other groups. Relatively little information is freely available at the college level since much of these data are tied up either in confidential planning documents, resource agreements or reports of institutional evaluation.

Much work has been done both formally and informally on the development and use of performance indicators for evaluation, planning and (more recently) management purposes. Little of it however, is in a form where it can readily be obtained since it has not been formally published. The development of management information systems has also been local and based at the college level, although in some systems (for example New South Wales) certain databases are managed centrally. Other States (for example Queensland) have been working on the development of a common, but decentralised management information system designed to take account of the data needs of colleges.

There appears to be a lack of readily available information about the development and use of college-based management information systems and performance indicators. Therefore a particularly fruitful area of future work would be:

- a simple manual on how to develop and use performance indicators; and
- a project to develop a relatively simple computer-based management information system which met the needs of colleges (and which could be readily adapted to address further data needs as identified) but which incorporated within them the information needed for both State/Territory and national data reporting. This development process would need to take account of those performance indicators most likely to be useful at the college level since it is inevitably at this level or below that data collection begins.

Perhaps the most notable example of the public use of performance indicators is their inclusion in the annual reports of the Department of TAFE in New South Wales (more recently the NSW TAFE Commission). While a range of general statistics and indicators are reported (e.g. numbers of total enrolments over a time series) other statistics are reported as well, including:

- completion rates for a range of courses and subjects;
- employment statistics and satisfaction rates in major subject areas (e.g. hospitality and tourism and electronics, computing and telecommunications courses);
- participation rates of particular groups; and
- utilisation of space and costs of consumables.

This information is particularly informative for those within and external to the TAFE system in New South Wales. In addition it has been reported (Henderson pers. comm.) that having performance indicator data available has helped to win a greater proportion of State resources in times of general cut backs since need can be demonstrated.

Performance indicators will also be reported for major areas of activity in BEVFET's annual report for 1989-90. Similar information is available in the SA DETAFE annual report. Simple performance indicator data appears in the annual reports of the ACT Institute of TAFE. The Office of Tertiary Education in the Northern Territory publishes selected TAFE statistics.

There is a need for more attention to be paid to the development and use of indicators - particularly at the college level. However, an increasing amount of information is available about the development and use of performance indicators at the State/Territory level also, although it is most often concerned with technique and process rather than use. There has been relatively little information published up until now about the performance of individual TAFE systems, whether in their own right, in comparison with other systems in Australia, or internationally. However, there may be an increasing demand for indicators of this type to be developed and used.

Chapter four: Performance indicators - what the literature says

In Chapter 2 some of the mission statements and corporate goals of a range of TAFE agencies were examined. Key words which emerged from this process included:

- planning;
- management information;
- accountability; and
- quality and quality improvement.

These will be used to focus the review of the literature presented in the present chapter. In addition I will re-examine the definition of performance indicators and also consider some of the issues and problems with performance indicators and their use as highlighted in the literature. Some of these issues will be considered in greater detail in the final chapter.

Performance indicators redefined?

A previous Centre publication (Guthrie 1988a) examined a range of definitions of the term performance indicator drawn from the work of Henderson (1987a) and Theodossin (1987).

Indicators were seen as:

- surrogates or proxies;
- substitutes for things that cannot be measured directly;
- quantitative or qualitative; and
- measures which help to capture the essence of what is happening.

Performance indicators may also be thought of as a communication device, an analytical structure for conveying relevant information. An essential feature of its definition therefore will be the manner of its use in the communication process (Findlay 1990).

However Vroeijenstijn and Acherman (1990) point out that, despite attempts to define the meaning and function of performance indicators, confusion still exists. Barnett (1988) and Hattie (1990) note the danger of performance indicators as correlational statistics because the indicators may not bear directly on performance (the example Hattie used was random breath testing and a particular blood alcohol level as a direct correlate of driving competency). Moreover Vroeijenstijn and Acherman also suggest that:

- people attribute different functions to performance indicators, e.g. accountability versus improvement (and this hampers the development of a common definition of the term);
- they are readily transferred into standards (although Hattie (1990) points out that most indicators are a statement of relative quality and a norm rather than a statement of some standard); and
- the users of performance indicators have different objectives or goals (this, in part, is a reflection of the political use made of performance indicators).

However they represent diagnostic features or tools, which can be used initially to help assess the state of organisational health or 'wellness'. This analogy will be developed further in the following chapter.

During the review of the literature other definitions of performance indicators have emerged, for example:

> Performance indicators are the means used to collect, on a systematic basis, data about the performance of programs . . . [which] enable information to be generated about performance against goals . . . [and] relate to *ends* not to *means*.
>
> (Queensland Treasury 1990c, p.2,6 and 8)

They are 'indicative' rather than 'conclusive' and may provide information about effectiveness, social justice, operational and outcome efficiency and standards of service (Queensland Treasury 1990c).

Hopkins and Leask offer the following definition:

> A performance indicator is a statement against which achievement in an area or activity can be assessed; they are also useful for setting goals and clarifying objectives. For some performance indicators, a brief statement is sufficient; for others, the statement should be more specific and refer to supplementary processes which would give a measure of depth, quality and/or commitment in the particular area. For the purpose of school improvement, performance indicators should reflect a synthesis of . . . aims and be constructed in such a way as to provide signposts for development.
>
> (Hopkins and Leask 1989, p.6-7)

Hattie (1990) has pointed out that, as correlates, performance indicators are only partially related to outcomes; they are symptoms, vital signs, used in diagnosis and decision-making, but can easily become the focus of attention rather than the outcomes themselves (that is, they become the tail that wags the dog). Hattie also refers to other definitions of performance indicators in the literature where they:

- are benchmarks for measuring progress or regression over time or differences across geographic areas or institutions at one point in time (Dunnell and O'Loughlin 1987);
- reduce a complexity of judgments to a simple objective measure; and
- are used to help in assessing impact, discerning effective practices, informing decision-makers, explaining causes, monitoring standards and trends, forecasting future changes, stimulating and focusing effort, defining objectives and ensuring accountability (after Cuttance 1989).

They are (as Findlay 1990 points out) a means of simplifying the complex information that underpins management's decision-making. Frackmann (1987) notes that performance indicators have two aspects - a technical process (how they are constituted, validated, etc.) and a 'hearts and minds' exercise (which relates to the way in which they are proposed, introduced and used). This latter aspect has considerable political connotations.

Cave et al. (1988) have given some attention to how performance indicators can be described in technical terms. The description includes:

- type of indicator (output, efficiency, effectiveness, quality, etc.);
- relevance (Does it relate to organisational goals and mission?);
- ambiguity (Is a high or low value of the indicator unambiguously favourable or

unfavourable?);

- cheat proofness (Can the indicator be manipulated? - very often multiple indicators are used so that 'cheating' on one will show up on another);
- cost of collection and availability of comparative data;
- level of aggregation; and
- relation to other indicators (Is it a unique 'measure' or one of a number of 'measures' of the same attribute?).

Hattie (1990) has suggested a range of other technical criteria, including:

- coherence (the balance between indicators in reflecting the essence of what is being measured);
- dependability (valid and reliable for comparative purposes within a single time frame); and
- durability (valid and reliable over time).

Most definitions assert that performance indicators are goal-related (Dochy et al. 1990) and used within a wider context of planning, providing information, intended outcomes, evaluation and review, and improvement (and, of course, accountability).

Performance indicators in planning and management

Their role in planning

Many corporate (or strategic) planning texts link the planning process to performance indicators (Curran 1988). Beginning with a charter or mission statement, an environmental scan is conducted which examines the context within which the organisation operates. Organisational objectives are then set, which need to be clear, concise and limited in number. They are also related to key areas of activity (for example, program areas in a program management process).

Goals or aims are then established which are measurable, followed by strategies or programs designed to achieve the goals. Performance indicators are specified and are designed to determine the success or otherwise in meeting the goals (the ends) - and for monitoring the adequacy of the plan itself. Such a sequence of activities sits comfortably with a strategic planning approach as proposed by Cope (1991).

The process of program management is discussed in greater detail in the series of publications provided by the Program and Strategic Review Branch of the Queensland Treasury (Queensland Treasury 1990a, 1990b, 1990c). The program management system they propose is made up of:

- a strategic plan for the implementation of relevant aspects of government policy;
- a program structure which is consistent with the strategic plan and which has goals framed in terms of desired outcomes;
- related management systems, the key one being a system of management information; and
- a regular evaluation and review process whereby:

(i) performance against goals is monitored on a regular basis;

(ii) consideration is given to alternative innovative means of achieving departmental goals; and

(iii) the continued appropriateness of the department's purpose, goals and strategies is reviewed; revisions are made and resources reallocated where necessary.

(Queensland Treasury 1990a, p.8-9)

They believe program management can assist managers by providing:

- a common framework for planning, resource management and evaluation;
- regular and systematic assessment of performance of programs against their stated goals (using, amongst other things, performance indicators);
- a basis for developing suitable supporting management information systems; and
- opportunities to engage internal and external stakeholders in a dialogue about performance.

Curran identifies three different types of indicators: structural, process and output. As he points out:

> 'Structural indicators' use inputs as surrogates for outputs. Typically, management groups will publicise structural indicators because input factors are almost entirely under their control - inputs such as the quality of the staff they hire, or the output capacity of their installations or, perhaps, the ratio of students to staff. **A structural indicator is, at best, only an index of the capacity of the organisation to perform work rather than an index of the work that is actually done.** (My emphasis.)
>
> On the other hand, 'process indicators' evaluate conformity to a given standard of performance but not the adequacy nor the correctness of the standards themselves. These indicators assume that those activities which must be performed for the organisation to be effective are known, and can be known. Structural and process indicators are often used as regulatory mechanisms, but regulation of the structures or processes within organisations can have negative effects on outcomes.
>
> The third type of indicators, 'output indicators', unfortunately do not necessarily provide a true measure of performance either because they reflect not only organisational performance but also uncontrollable external factors. They are also inherently difficult to measure and perhaps nowhere more so than in the delivery of goods or services like education, which has outcomes valued differently by different sectors of the population.
>
> (Curran 1988, p.57)

The different emphasis of different groups on the choice and interpretation of indicators and the problem of the correlation between the performance indicator and the actual reasons for the apparent level of performance are important points. Many of our present indicators are structured, but there appears to be a wish to move towards more output or outcome-oriented indicators - despite their inherent problems.

Their role in management

Public sector organisations such as TAFE agencies are increasingly caught between properly accounting for their use of consolidated revenue for funding their activities (which has traditionally meant a relatively high level of central control and accountability), and their increasing market orientation (given the deregulation of the training market and the increasing competition TAFE faces from other providers of training). This has lead to TAFE colleges adopting an increasingly service-related perspective and offering courses and other programs of study which have been customised to meet their various clients' requirements. College directors are now less administrators and more clearly managers.

Increased autonomy is necessary in order to compete in this more market-oriented environment although, as Hüfner (1987) points out, a balance needs to be struck between the 'state' and the 'market' forces acting on organisations in order to produce an 'optimal mix'. However increased competitiveness may be restricted or prevented if practices or regulations which will enable greater freedom of action (e.g. the right to hire and fire) are not allowed, or practices or regulations are kept in place which unnecessarily restrict a manager's range of options.

While some (e.g. Singh 1988) believe that performance indicators may be used as mechanisms for increasing centralisation and control (as indeed they can be!), others, (e.g. Bormanns et al. 1987) suggest that they offer a mechanism for providing increased freedom and self-regulation with a broad framework of accountability. They enable governments to issue fewer prescriptions **ex ante** while registering the results **ex post** (Bormanns et al. 1987). They can also be used to develop a greater degree of institutional transparency (Hüfner 1987).

Nevertheless the fear that the development of a set of indicators will lead to system ossification once introduced is a very real one. In the UK, reports such as *Obtaining better value from further education* (HMSO 1985) dealt disproportionately with the issues of economy and efficiency. If adopted unquestionably such indicators provide messages to those managing organisations (and those implementing, using and interpreting the indicators) about what is considered to be important. Thus it is a matter of the weighting accorded each of the indicators proposed during the planning and management processes which is, in turn, a reflection of, or message about, the relative importance of the feature it is designed to monitor or measure.

Hüfner (1987) points out that German and Austrian universities have noted that a number of indicators are focused on collecting information about operating indicators (i.e. compliance with standard values for space, annual staff teaching hours, staff/student ratios, etc.) which are a reflection of parameters set by specific planning and steering mechanisms. In Australia these have been enshrined in industrial awards which guide, and possibly overrestrict, the ways in which organisations can deploy their resources. While guidelines and the resultant indicators have advantages, they also enshrine input measures while (possibly) ignoring important indicators of outcome. Thus the development of a comprehensive range of indicators which really attempts to reflect the goals of an organisation, and provide a reasonable measure of goal or target achievement, is difficult. Essentially it gets back to the question raised by the FEU (1989) as to whether indicators are a developmental tool OR a measuring stick. There seems to have been a move away (in the literature at least) from an initial concern with efficiency, to an increasing concern with measuring quality and effectiveness (in terms of the extent to which desired outcomes were achieved).

It is generally acknowledged however that these sorts of indicators are far more difficult to develop.

Their role in resource allocation and deployment

Indicators may be used in the process of resource allocation. Industry and award restructuring, together with increased devolution of financial responsibility in most

Australian TAFE systems, are placing increasing pressure on the traditional budget processes of incremental changes to the allocation of resources. In broad terms the rules have stayed the same and funding decisions 'tinker at the edges'. Nagel (1991) refers to this as 'historical incrementalism' (i.e. last year's budget plus or minus a bit). Rutherford (1987) aptly describes this process as 'equal misery for all'. Many are unaware of the historical precedents and processes on which funding has been based, and their current validity may also be questionable in the light of contextual changes.

The TAFE National Centre (Nagel 1991) was commissioned to produce a funding model for TAFE in the Northern Territory. (Other States/Territories are also addressing the issue of resource allocation and funding.) The application of such a model would allow resource allocations to be influenced more by current needs than precedents (suggesting an increased role for planning), and which encourages the pursuit of excellence (quality, efficiency, importance of the customer, output/outcome rather than activity), better management and the collection of required data accurately and in a timely manner. It was also seen to assist decision-making and related resource allocation and enable those in power, and in the wider community, to perceive that TAFE represents value for money. Again, this suggests the need for adequate data gathering and a range of performance indicators.

Nagel suggests the need for a simplified funding model so that the mass of financial detail is removed, but which allows trends and inconsistencies to show up, thereby assisting in decision-making. While he believes some form of student contact hours measure represents a generally accepted proxy for output or activity, he recognises the need for better, but 'more esoteric' measures of output. He also recognises the danger inherent in the belief that more is better. Imaginative management which increases efficiency is thus discouraged.

Jäppinen (1987) suggests that cost data are very heterogeneous, and without unambiguous definitions of costing variables, cost data cannot be readily compared. This, in turn, suggests considerable caution is needed in their use as components of performance indicators. Experience in Australia (see COTTS 1991) confirms these concerns. Hüfner (1987) has noted that if organisations lack control over such features as finance, admissions, staffing levels etc. they are not encouraged to think strategically.

Recent work by Lagunzad (1990) on measuring the utilisation of facilities in TAFE is also relevant at both the State/Territory and institutional levels. As he points out, governments at both State and federal levels have been placing post-secondary institutions, including TAFE, under increased pressure to achieve higher levels of efficiency and effectiveness in their use of facilities. It is also useful in planning future space requirements. However most systems are frequency-based and *ad hoc*, and both the methodology and resources to conduct such studies have been lacking (Lagunzad 1990).

Presently a lack of widely accepted utilisation standards exist. This has inhibited the publication of utilisation data for fear of misuse or misinterpretation, although present indicators show that TAFE's usage of its facilities is better than that of higher education and comparable with those of the further education section in the UK. Guthrie and Bone (1989) briefly considered facilities' utilisation in their evaluation of Regency College on behalf of the Department of Employment, Education and Training. This college uses a computer-based room allocation/time-tabling system.

Their role in evaluation and review

Performance indicators can also play an important role in institutional evaluation and review. Queensland TAFE has developed self and external institutional review procedures (see Chapter 3). Such a process is now required in Victoria. Henderson (1987b) also produced a paper on the subject.

The Further Education Unit in the UK (FEU 1989) has developed a college-based audit approach materials which advanced the work of the Audit Commissioner (HMSO 1985) and the recommendations contained in the Department of Education and Science report entitled, *Managing colleges efficiently* (DES 1988). In New Zealand, Southland Polytechnic (1990) has developed a program evaluation strategy which includes the production of a program profile (including a number of performance indicators), data on costs and a series of questionnaires for students, staff, graduates, employers and the program's advisory committee. Early work by Byrne et al. (1984a, 1984b) in South Australia provides much material which could be used in an institutional audit and review process.

Their introduction

Kamis-Gould (1987) has noted some of the issues surrounding the introduction and use of performance indicators. Three phases are suggested. These are:

- **hostile** - They can't do this to us!;
- **anxious** - Are they really going to do this to us?; and
- **co-operation** - Together we can improve the system and assure rewards to deserving providers.

Frackmann (1987) has noted 3 different strategies used by organisations which are being subjected to the introduction of performance indicators. These are:

1. *The strategy of defensiveness:* The organisational unit under consideration tries to hide information and prevent external review and insight. This aim is best served if no information at all regarding the unit is generated. This strategy is successful as long as the organisational unit is not punished for withholding information and is not suffering (e.g. financially) under the prevailing conditions;
2. *The strategy of incomplete collaboration:* The organisational unit under consideration participates voluntarily in efforts to gather information concerning the unit. The effort is organised under the auspices of 'test' or 'pilot' which will have 'no consequences', whatever the results of the information gathered. This results in making it unfeasible to collect information in the first place, a task of little use, with few consequences and results. This strategy is successful as long as the pressure for change is not required by both sides, and change is not identified as having advantages for both sides;
3. *The strategy of shaping the change:* The organisational unit under consideration provides information that is assumed to be advantageous for its own survival. It puts forward suggestions for the indicators by which it wants to be judged. It suggests channels and utilisation of information, following more the ideal of autonomy and self-regulation than the model of centralised governing. This strategy seems to be necessary if change cannot be prevented.

(after Frackmann 1987, p.152)

Often these strategies are a reflection of moves, usually by outside forces, to increase the accountability requirements on organisations for the resources they obtain and use. A range of approaches is possible including:

- fostering a spirit of self-regulation and accountability; and/or
- using information externally to restrict or enhance available resources - in other words to introduce tangible consequences resulting from the performance information gathered; and/or

- using indicators as a means of fostering constructive dialogue between those within and outside the organisation.

The introduction of performance indicators has caused disquiet in some TAFE agencies, particularly where their introduction and use has been seen as central office inspired and focused punitively, and most particularly in relation to allocation of resources. This is contrasted by the approach in South Australia (see Chapter 3), which has aimed at developing and fostering an informed debate whereby the performance and management information needs of all parties can be considered and resolved. In all cases it is preferable if co-operation is sought and all parties are involved in shaping change.

Management Information

Performance indicators rely on the accuracy and appropriateness of the data which underpin them. The present pressure to develop nationally acceptable and State/Territory-based systems of performance indicators has led to the desire to improve the quality of the information and data gathered within their respective systems. However colleges providing the data have had very little stake in improving data quality, seeing its provision as a tiresome obligation rather than something of use to them.

The increasing devolution of management responsibility means that, at the college level, data are increasingly seen as something to be used rather than reported elsewhere (see Chapter 2). This has led, inevitably, to an increased interest in its accuracy at this level. There is also concern to develop common definitions (and consistent application of these definitions), particularly if comparisons are to be drawn.

In short there is an increased desire to make the data more useful and useable. Initiatives are taking place at the national level, and a number of States are redeveloping their data models (see Chapter 3; COTTS 1991) after reconsidering their information needs. For example, Lloyd (1990) shows how the Western Australian Department of TAFE is moving to adopt a Learning Management System (LMS) which puts student outcomes at the centre of a college's organisation. It is proposed to phase it in over a 4-year period. One component of the system (the student-based evaluation system - SBES) will use a range of indicators to provide management information (the LMS and SBES are discussed in Chapter 3).

Moreover, data need to be analysed rather than just collected. This suggests the need to describe what data are required in the light of organisational goals and objectives. How these data and other information will be analysed, used and reported in developing an appropriate data model and management information system needs to be determined. Management information, like performance indicators, only provide part of the information a manager needs in order to make decisions.

The advent of computer-based systems of data storage and manipulation and retrieval at a reasonable cost has made the introduction of integrated management information systems and their related performance indicators more feasible. Nevertheless most Australian TAFE systems have been left with a relic of unrelated databases developed for needs in the past. Now the need is for greater integration.

Moreover many colleges have not had the advantage of ready access to a management information system which assists decision-making at the college level - let alone at the level of schools, departments or individual teachers coordinating courses or subjects. Such systems are needed if accurate and reliable data are to be obtained for use at higher levels. However it is difficult, if not impossible, to devise a management information system which will comprehensively meet every information need (Queensland Treasury 1991a).

Ideally, however, Queensland Treasury suggests that such systems should:

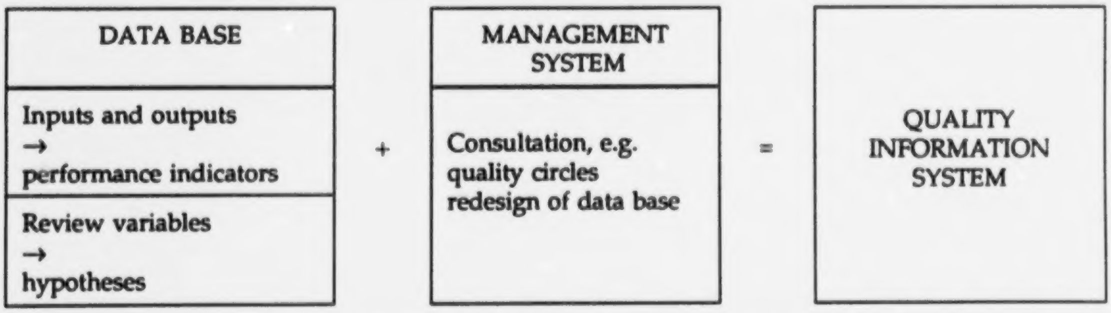
- be directed toward the setting and monitoring of departmental goals and objectives;
- facilitate the devolution of authority and responsibility;
- be focused on a relatively small number of key performance indicators which require regular reporting. These indicators should show the department's overall performance against both longer-term strategic plans as well as short-term targets;
- be able to provide information both on resources usage (inputs) as well as outputs and outcomes;
- be able to produce timely reports in readily comprehensible formats with sufficient flexibility to meet changing requirements;
- be cost effective; and
- draw on the same data sources used by line managers for operational decision-making.

It is also necessary for the data to be aggregated across work units and through management levels. In other words, the information collected has to be useful to a variety of groups, and at a number of levels.

Hopkins and Leask (1989) describe the approach adopted by the Newcastle Education Group to the use of performance indicators in evaluating the technical and vocational education initiative (TVEI) program in the UK. They view the use of management information systems in terms of ongoing procedures of quality control. In this way valid and useful information is fed in at all levels. Subsequently the various management levels need to interpret and make use of the data in the light of their own specialised knowledge of situations within the unit(s) which they are managing. (This is where the qualitative information comes in!)

Using the information system enables strengths and weaknesses in it to be revealed. Thus the users can assist in any revisions needed to the data collection processes or instruments. The model is presented in diagrammatic form below (after FitzGibbon and Hazelwood 1988):

Figure 4.1 **A model for a quality information system**



Thus data, management systems and practices (e.g. quality circles) are linked to provide a quality information system. The issue of quality will be addressed shortly in this chapter.

The final factor related to management information is the quality of the information itself. A variety of authors in the higher education sector (for example Vroeijenstijn and Acherman (1990)), and in the further education sector in the UK have expressed concern about how the academic performance of an individual or a department might be indicated. As Theodossin points out:

> The British education system has not been notorious at institutional level for sustaining a valid database on which to take decisions. Traditionally there has been very little (his

> emphasis) attempt at formal (i.e. organised, systematic, regular) data collection.
> (Theodossin 1987, p.19-20)

The same would be true for much of education in Australia - including TAFE. In addition, while definitions and weightings for indicators need to be proposed and agreed to, there will also be considerable debate over the technical detail of gathering, processing and weighting the data if intrastate (let alone national) comparability is sought.

The VEETAC Committee on TAFE and Training Statistics (see COTTS 1991) has expressed its concern over the quality and comparability of the data gathered both within and between systems (see Chapter 2). This problem is magnified when data are consolidated, ratio-based measures developed, and systems compared. The issue of the quality of data is tied up with its immediate usefulness to those who collect it. In the past little use has been made of such information for management purposes - although the potential was always there to develop and implement management information systems and their associated performance indicators at a local level. This issue will be picked up again in the final chapter.

Accountability

I have already noted the uneasy relationship between the use of indicators for development versus measurement and control, and for accountability versus self-regulation, performance monitoring and improvement. These tensions are real, and reflect the balance between and strength of the political forces acting to control or to shape what an organisation does - its actions and its priorities. It is, in a nutshell, the balance between external control (or a measure of it) and self-regulation. This issue was discussed in an earlier section of this chapter. However, if accountability is 'bottom up' conformity and consistency are the essential elements and imply commitment to comparison linked to external control (Theodossin 1987). Top down accountability, on the other hand, is about diversity and customisation. Comparison in these circumstances is meaningless. It therefore depends on who is the focus of accountability - those 'above', or those 'below' who are served by the organisation (i.e. its customers or clients).

Performance indicators are used for accountability because they are readily understandable. They appear to be simple and convenient to use. However their apparent simplicity can mask a complexity which underlies their definition, derivation and interpretation. For example, as Kalecki (1989) points out:

> The stupidest thing is not to calculate, the second most stupid thing to do is follow blindly the results of one's calculations!

If not carefully conceived they may only have marginal relevance to the feature of the performance which they have been developed to indicate. They are also one of a number of potential mechanisms of accountability and control.

The move towards the use of performance indicators may be Treasury-inspired (see Hopkins and Leask 1989, Queensland Treasury 1991a) and coincides with, or is part of, the movement towards program management and budgeting favoured in Australia recently at both federal and State/Territory levels. It relates to goal- or target-oriented approaches to management. However the measure of external control being exercised is determined by the extent to which the targets are imposed rather than negotiated. Alternatively they may be set by the organisation being 'measured' itself and then agreed to by an external regulating body.

Some of the more recent literature seems to be heralding a swing away from the use of performance indicators to serve the needs of accountability, particularly that which is 'bottom up'. Increasingly they seem to be focusing on them as 'top down', and as measures of quality and the quality of outcomes (and for quality improvement). Perhaps it could be termed accounting for quality.

Quality

The concept of quality in relation to a TAFE agency, an institution, a program or course of instruction or training can be defined by its degree or grade of excellence. Feigenbaum (1983) describes quality in the following way:

> Quality is a customer determination, not an engineer's determination, not a marketing determination, or a general management determination. It is based upon the customer's actual experience with the product or service, measured against his/her requirements - stated or unstated, conscious or merely sensed and always represents a moving target.
>
> (Feigenbaum 1983, p.10)

Thus quality is a relative term, dependent on the attributes chosen (and excluded) by customers and the relative weighting they give the various attributes.

Moreover Zeleny (1991) suggests that the quality of any product or service depends on the quality of the underlying process of its design, production and delivery. Because it is a relative term, measures of quality are sought. The process of evaluation refers to the assessment of merit or worth, and so many of the techniques used to evaluate **institutions** (see Byrne et al. 1984 and various publications of the Institutional Review and Development Branch within Queensland TAFE) or **programs** (see Guthrie et al. 1986, 1988; Queensland Treasury 1990b) can be used to determine the degree or grade of excellence - their quality. Performance indicators (see Guthrie 1988a) represent another mechanism which is potentially helpful in measuring quality, as long as the attributes of quality can be specified and a variety of means used to measure them. However, it has been suggested that they are, at best, only partial operationalisations of quality (Goedegebuure et al. 1990), because quality is a multidimensional concept (Westerheijdin 1990).

It is also important to have a concept of **appropriate quality** rather than, necessarily, 'high' quality. Whilst the two are not incompatible, a 'high' quality program, school or institution, may not be efficient and cost-effective. It may not meet the needs of those it serves. In short, quality has to embrace the law of diminishing returns to ensure that it is not maintained or improved by an unreasonable use of the available resources.

Needless to say the criteria used to determine quality can compete, or the quality dimensions chosen may be at a variety of levels, because perspectives differ. In short, what constitutes quality in the eyes of one party may not have the same importance in those of others. It may not even be a relevant attribute at that level. This gets back to a range of questions posed by Paardekooper and Spee (1990) such as:

- What standards should be used to detect differences in quality?
- Who should judge quality? When? Using what techniques and approaches, and to what purpose?
- What role is there for a proper information system in this area?
- To what extent should these judgements be verifiable and comparable, and what weight should they carry?

Quality might also be linked to achievement of goals (Westerheijden 1990).

Cope has defined total quality as:

> . . . a philosophy of continuous, constant, impassioned improvement everywhere, by everyone in the organisation all the time.
>
> (Cope 1991, p.80)

Quality and its improvement are therefore functions of the entire organisation. This fits in well with the conception of Total Quality Management (TQM), that is, a management philosophy which utilises tools and techniques for:

- control of quality,
- planning of quality, and
- continuous improvement,

in everything which organisations carry out. It is an attitude to working towards continual improvement in quality and productivity, at all levels of commercial and industrial organisations, in order to meet customers' needs at each stage of the process. Performance indicators can play a very important role in this process, because measurement is central to the methods of TQM.

The concept of TQM suggests that everyone has a customer, or a range of customers, whose needs have to be served as well as possible. However (as Zeleny points out) quality has often been pushed out by a survey data saturated (informed) producer rather than pulled in by an integrated and empowered customer who has defined quality in terms of the fitness of a product or service for their use. In short, quality can be producer- rather than customer-driven (as it perhaps should be).

Thus Zeleny believes quality management or improvement processes need to integrate the customers into processes rather than separating them from them. In other words it is concerned with gathering information about what is happening rather than what customers, and others, say is happening. To control the quality of outcomes, the organisation needs to implement systems which control the *processes* involved (Hayton et al. 1989, pp. 18, 19).

If performance indicators are to play any role in such a quality improvement system they must free it, not constrain it. (It is much easier to talk about quantities in education than its quality, see Singh (1988): Jäppinen (1987) doubts whether quality can be measured with indicators.) It also means that resistance to change within an organisation must be reduced to a minimum, and any processes which indirectly or even directly reward and encourage resistance to change eliminated (for example, outdated or inappropriate performance indicators).

In many cases the promotion of change will involve the removal of traditional checks and balances because, in most traditional organisations change is pushed out from the top and encounters restrictions further down which are numerous, strong and persistent (Zeleny 1991). On the other hand, in an improvement-oriented management system, for example the integrated process management (IPM type), change, quality etc. are generated at lower and more proper levels of contact, pulled in and propagated upwards encountering (perhaps) only single weak and unsustainable resistance at the top.

Another principle of TQM which is relevant to implementation of performance indicators is: "people work within systems" (Hayton et al. 1989, p.14). Deming (1986) has stated that 85% of problems in an organisation can be attributed to the system and 15% to individuals.

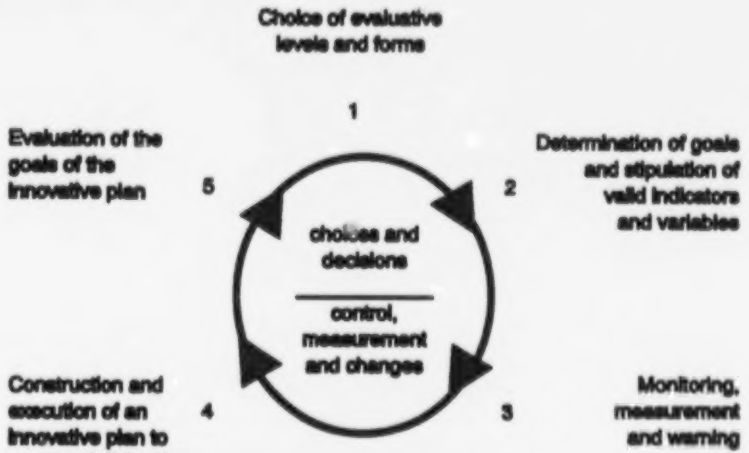
Hattie (1990) points out that the debate over performance indicators often promotes discussion of deeper and more important issues (for example, What is quality and how do we go about improving it?). They can be (as Theodossin 1987 suggests), the first step in establishing a viable quality control or assurance system.

Dochy et al. (1990) suggest that quality assurance is a continuous process of control. Quality measurement is a snap-shot focussing on shorter-term outcomes. Quality assurance is a cyclical process which includes three independent phases:

- monitoring (serving as an early warning system to trigger comprehensive assessment of the causes of deficiencies that are discovered);
- measurement (including a linked number of performance indicators with high validity to detect deficiencies); and
- improvement.

However, most quality improvement systems tend to underemphasise the latter two phases (Dochy et al. 1990). The cycle of quality assurance is presented in Figure 4.2.

Figure 4.2 The cycle of quality assurance


Choice of evaluative levels and forms
1
Determination of goals and stipulation of valid indicators and variables
2
Monitoring, measurement and warning
3
Construction and execution of an innovative plan to remove deficiencies
4
Evaluation of the goals of the innovative plan
5
choices and decisions
control, measurement and changes

(After Dochy et al. 1990, p.139)

The process is not dissimilar to the processes of external and self-review considered briefly earlier in this chapter. Nevertheless it touches on the notion of a culture which promotes, maintains and improves teaching quality (see Sizer 1990) and is related to regular reviews of subjects, courses, teaching methods and resources, quality of course delivery, staff development and appraisal procedures and client satisfaction.

From what has been said so far, it is clear that 'quality' is not easy to define or to measure. It has already been stressed that the notion of quality is a matter of opinion and therefore its measurement is determined by those elements which individuals or groups choose to identify and to emphasise. Therefore opinions about quality in education and training may lead to the issue becoming 'political'. Nevertheless performance indicators have an important role to play in enhancing the quality debate, and in focussing on and helping to measure these features which help to tell us about the quality of our processes and outcomes.

Other issues highlighted by the literature

Many of the issues arising in the development and use of performance indicators have already been discussed. A number of the more important of these will be considered in greater detail in the following chapter. This section will concentrate on those issues identified by the literature which have so far received little attention. These issues are as follows:

- the use of the processes of peer review in assessing quality;
- performance appraisal at the individual level; and

- a range of issues and concerns raised by Singh (1988) regarding performance indicators and their use.

These issues arise not so much directly from the performance indicator literature itself; rather, they are a reflection of the wider context in which performance indicators are developed and used.

Peer review

Peer review traditionally has been used in the education sector (and particularly so in higher education) in the referee system for academic journals. In the present context therefore, the term peer review is used somewhat loosely (Goedegebuure et al. 1990). Indeed the whole publication edited by Goedegebuure and his colleagues pay considerable attention to the issues of evaluation, peer review and its role in the development and use of performance indicators. Certainly the term 'peer review' involves human judgement which may or may not be informed by more or less objective databases. (Among the more 'objective' data are those derived from performance indicators.)

Who are these peers, however, is open to considerable speculation and debate. In UK universities reviews by peers occur at the course or departmental level. They may also take place in a variety of forms - from individual to system (depending on who the peers are!). A range of literature is available on the subject (e.g. Roe and McDonald 1983, Moses and Roe 1986). Peer review may be used at the course level to provide feedback to those involved in developing and implementing particular courses. Such a process (using Course Review Committees) has been employed by TAFE in South Australia (Guthrie and Bone 1989). Finally, peer review it may be used at the individual level in a process of clinical supervision (see Guthrie 1988b) or, at a more senior level for the review of individual senior managers (Mageean 1990). However, in general, Australian tertiary education lacks a culture of evaluation (Bourke 1986), although Hattie (1990) examines the use of performance indicators in assessing quality of departments of education in universities in Australia.

Peer review is seen as having high content validity (Goedegebuure et al. 1990) because it can be used directly to assess quality. However its inherent subjectivity is seen as a disadvantage; obviously however, such a process can never be fully automated (Paardekooper and Spee 1990). External review also complements internal self-review (Vroeijenstijn and Acherman 1990) and the processes of review by peers on the one hand is not incompatible with the use of performance indicators on the other. Indeed the Queensland Treasury (1990a, 1990c) proposes the use of performance indicators AND a process of evaluation or review (1990b). The important issue has ceased to be 'Should peer and other reviews be conducted?' The question now relates to the technical details of how, when, and where they are done. Second, the review activities and findings need to lead to action. Thirdly in Australia the answers to the questions of what information is needed in this review process?, when?, how?, and from whom?, are still being resolved.

Performance appraisal

For the most part the performance indicator and performance appraisal debates have remained separate - often quite deliberately. Appraisal is seen (Johnston 1989) as the identification of strengths and weaknesses, and the development of programs of action that will enhance the strengths and remedy the weaknesses. Appraisal, like review, can occur at a variety of levels - from an individual to a system and beyond. The project conducted to develop indicators of client satisfaction for the South Australian Department of Employment and TAFE (Hayton et al. 1991) was very conscious of the sensitivity of the data it and other processes like it could generate. In courses with limited enrolments and at small institutions, it is likely that the level of performance of individual staff could be identified. The issue is whether this information should be available to managers, how it should be used and to what end. South Australia (Hayton et al. 1991, p.27) has kept the issue of performance appraisal at a local management level.

The recent review of TAFE teacher preparation and development (Hall et al. 1991) noted that appraisal was an issue in teacher development. Some groups were concerned about the opportunities for its abuse, the criteria upon which appraisal would be based and its processes. Others noted the potential usefulness of the process in improving individual and departmental performance, and in increasing individual professionalism.

As Bourke has noted in relation to higher education:

> One mark of a profession is that is has standards of practice and performance which are maintained through regular scrutiny conducted by fellow practitioners. Academic work has progressively experienced in most of its attributes in the last half-century other processes of professionalism . . . But in some fields a pre-professional notion of performance has been surprisingly tenacious.
>
> (Bourke 1986, p.23)

In higher education in the UK the debate has linked the notion of indicators of performance to those used for individual appraisal. Some staff (see Rutherford 1987) would prefer not to see the formalisation and legitimisation of current informal processes while others were concerned that such appraisal occurred behind the scenes and was based on criteria that were unknown and hence far from clear. In short, they believed processes need to be more open to scrutiny. It was noted that while improvement might be the function (by providing help and retraining) there was a fear that it would be used for judgement, and to help identify departments and individuals to be 'rationalised'.

Appraisal processes may involve staff, peers and students (Johnston 1989). Moreover, appraisal processes have been linked to the probation and promotions systems (Rutherford 1987). However, such processes require that resources be allocated (or reallocated) if the outcomes of the appraisal process indicate that changes are needed. How such appraisal systems would work - whether at the individual level or above - will require further consideration by those proposing such approaches as well as those who will ultimately be appraised. If nothing else, it will make currently informal systems more formal, with responsibility for any development or improvement resting with the individual or, more likely, jointly with the institution or organisation. However, one-way appraisal will always invoke strong opposition (Rutherford 1987).

It is likely that the two issues (performance indicators and performance appraisal) will become increasingly linked. Nevertheless, there is considerable emotion in both issues, but the latter (being more personal) exerts a more immediate impact.

Other issues

Singh (1988) has highlighted a range of issues, and the second order (and often unanticipated) consequences associated with the use of performance indicators in education. Some of these (not already covered before) are listed below. He suggested that they:

- are a displacement ability - a self-serving activity for corporate managers, rather than a serious minded effort to ensure accountability (and) to improve education . .
- (possibly) have adverse effects on students, teachers and teaching, and quality;
- are the public sector equivalent to the corporate sector's profit and loss accounting; and

- are indicators of action and of the establishment's far sight or benevolence. They have a symbolic use regardless of the validity of the statistics. They may be used to obscure rather than illuminate reality.

These and a range of other issues have been raised in Chapter 3 and the present one. These trends will be drawn together and considered in the final chapter.

Summary

The literature and the various State/Territory TAFE agencies see the introduction and use of performance indicators as inevitable. This is not a bad thing: they are already promoting debate on issues such as quality, accountability, resource allocation, planning, management and the quality of data which underpins many of the indicators already in formal or informal use.

They have considerable potential to be useful management tools at a range of levels and to inform the debate about the efficiency and effectiveness of TAFE which has hitherto largely been fuelled by rumour, innuendo and gossip which (unfortunately) has also often been exaggerated or untrue.

The literature generally supports the introduction of indicators; however the cautions expressed are no longer related to whether or not they should be introduced and used. Rather they relate to what indicators should be introduced, for what purpose and how validly they reflect reality. The debate now is concerned with the technicalities and with winning hearts and minds; the issue of whether or not to have them is dead. They are here now; the die is cast.

A range of conclusions can be drawn from the review of the literature. It is clear that:

- there is still considerable variance in the literature over the definition and predominant purposes for developing, using and reporting indicators of performance;
- they are now perceived more properly as elements of a management information system and the management process rather than isolated tools;
- they can be used to promote debate and increased professionalism, both in terms of educational and management practice. Nevertheless there is still a measure of scepticism about their validity and ultimate usefulness;
- indicators are progressively being seen less as tools of 'bottom up' accountability; rather more as promoting 'top down' accountability, with its associated concern for meeting needs and promoting quality;
- the move towards their role as a management tool has been accompanied by an increased concern with their use in resource (and particularly budget) allocation. This is particularly so as traditional views and government funding models are broken down;
- the choice of indicators to include or exclude in the set of indicators chosen provides messages about what is considered important. Therefore the choice and use of indicators needs to be based on their appropriateness rather than their availability and the extent to which they can individually or collectively provide a picture of what is actually happening;
- if indicators are not chosen and used wisely they will restrict rather than foster diversity and good practice;
- a range of indicators has to be used, where possible, in order to obtain the most valid indication of performance;

- attention to the quality of the data upon which indicators are based is a pressing need both in Australia and overseas; and finally
- a sense of ownership by those involved in collecting and using the information needs to be fostered if performance indicators are to be implemented and used effectively.

Chapter five: Issues and conclusions

Introduction

This publication has attempted to draw together information about how performance indicators are being implemented and used by TAFE agencies throughout Australia (Chapter 3). This has been considered in the context of TAFE's perceived mission and corporate goals (Chapter 2) and in the wider context of government policy and the literature from both here and overseas (see Chapters 1 and 4). This final chapter attempts to identify and discuss key issues as well as reach some conclusions about the state of play in the introduction and use of performance indicators by TAFE. Specifically this will be undertaken by:

- looking at some of the strengths and weaknesses of performance indicators (and draw some conclusions about its directions) by using a medical analogy; and
- considering a range of other issues (for example data quality, social justice and the use of performance indicators and the development and implementation process).

Performance indicators - a medical analogy

The problem with many analogies is that if they are simple they succeed; excessive analysis means that they break down. This will be the case here, but in doing so a number of important conclusions and issues about performance indicators - and the directions in which debate and practice seems to be moving in this field - will be drawn out.

When we visit our general practitioners with medical complaints, they are benefited in their diagnosis by having previous records about us as well as knowledge of our personal traits (a qualitative background). Certainly they receive from us impressions and feelings (again, qualitative data), but they also have a range of hard data available too (for example, pulse rate, blood pressure, temperature, etc.) and a number of other readily available performance indicators to help them with their diagnosis. At a second level they have certain other tests available, some of which can be performed at their surgery, others which need to be sent to a specialised laboratory (e.g. blood tests, blood sugars, cholesterol, etc.). Referral to specialist doctors or to sophisticated (and often extremely expensive) testing are other possible options.

So it is with performance indicators. Some of them are simple and useful in helping with a first pass diagnosis; others are more sophisticated, requiring more (and increasingly) complex processes of collection and processing to obtain a result. Nevertheless nobody should rely on a single measure to make a diagnosis (your temperature is up, therefore you have bubonic plague); rather doctors and users of performance indicators need to use a range of tests, observations - and experience - to draw suitable conclusions. A single indicator is a very poor diagnostic tool. However the indicators taken together do need to be comprehensive enough and carefully designed in order to provide insights into what is really happening to allow us to draw conclusions and make decisions.

There has also been a slow but steady change in the role of the general practitioner. This has been accompanied by an increasing awareness of the factors which affect our state of health. Thus general practitioners are moving more from a situation of treating symptoms as they are presented (you come to me with a problem and I'll fix it) to a system which promotes greater individual and community 'wellness'. This is a recognition that one's state of health is, in large part, a reflection of that individual's lifestyle which, in turn, can be controlled to a very great extent by the individual themselves. Certainly illness still has to be treated, but a lot can be prevented, and the quality of life improved by the individual realising their health is their own responsibility.

Again, so it is with performance indicators. Just as going to the doctor to be 'cured' *may be* a denial of one's contribution to getting sick in the first place, so it is if one denies one's responsibility to manage and be accountable for the educational processes under one's control. Thus, perhaps, management and accountability are not all that incompatible. They are however, if:

- the individual or organisation is made accountable for achieving outcomes, but is not actually given the authority, responsibility and means for achieving them (i.e. the real control lies elsewhere);

- the outcomes against which performance is measured are unreasonable and not achievable; that is, the outcomes agreed to actually do not relate to something the organisation or individual can actually do; and

- the measures or diagnostic features chosen to judge the level of performance are inadequate for the task. They have to be reasonable and valid measures of the feature and, hence, have to be carefully designed too!

Likewise, improvement in one's state of health (and general quality of life) can be achieved through attention to key factors responsible for monitoring and improving one's physical condition and lifestyle. Attention to the equivalent features will lead to improvements in quality in vocational education and training. All of this comes back to a sense of professionalism, and a recognition that all individuals and organisational systems within the vocational education 'organism' contribute to the maintenance and improvement of its health and well-being. And - of course - the prevailing 'culture' of a society and key individuals within it are responsible for creation of the organisational systems.

The analogy starts to break down at this point, however, because most organisms work to preserve a homeostatic state - which maintains systems in balance within an acceptable 'normal' range. The problem for vocational education, and hence for setting performance indicators, is answering the question - What is normal? While colleges, departments and other organisational units attempt to maintain a state of balance, there needs to be allowance for diversity. The range of ways of delivering programs and courses, the balance between intrinsically lower and higher cost courses, the problem of providing courses in rural areas or by distance education or open learning makes the setting of bench-marks very hard indeed (although targets can be set more readily). It makes comparison difficult too - unless it is comparison over time within an organisation or organisational unit, and in relation to its goals and the achievement of mutually agreed targets.

However the medical analogy may come to our aid again, because although systems tend to be homeostatic they operate within a range dictated by circumstances and lifestyle (e.g. they are the intrinsic factors which contribute to the 'actual' cholesterol level (and which may be beyond one's control) balanced against those elements of one's behaviour which can actually help to control the level). However just as a society and the individuals in it are responsible for the creation of organisational systems in education so it is in medicine. Payer (1990) points out in her comparison of the medical culture in four developed western countries (France, the UK, the US and (then) West Germany), different countries set different bench-marks for particular diagnostic indicators which dictate whether or not an individual patient will be likely to obtain further treatment. For example:

> A few weeks later I came upon an article dealing with the new drug treatments aimed at lowering cholesterol. In the article, a Canadian doctor alleged that while in England doctors start treating patients for high cholesterol only when a patient's blood cholesterol level reaches 300 milligrams per decilitre of cholesterol, in the United States treatment may begin at 225 milligrams, and some doctors are suggesting even lower levels.
>
> (Payer 1990, p.153)

In medicine, like education, bench-marks are flexible because it involves the decisions of individuals and the influence of culture. Therefore organisational form and culture needs to be borne in mind both in setting bench-marks and making comparative judgements. Comparative judgements may therefore be poorly informed because they are made on the basis of comparing organisational structures and cultural frameworks which are not the same.

In relation to performance indicators, the balance appears to be shifting from a predominant concern for accountability on the one hand, to one of quality improvement on the other. Performance indicators have a clear role in management and in improvement. They are, if properly conceived, a way of diagnosing illnesses before they become terminal, and of providing guides for the maintenance and improvement of organisational health and well-being. Accountability (while it has its processes) is more of a state of mind - although it is important for those both inside and outside TAFE. If the debate over performance indicators helps to promote a better state of mind which recognises and responds to accountability requirements so much the better. Ultimately other weapons should be found for forming judgements and enforcing findings because respect for the performance indicator 'law' (or lore?) will only come if performance indicators are perceived as respecting and protecting everybody's rights.

Issues

A plethora of issues were raised in the previous chapters and in an earlier Centre publication (Guthrie 1988). This section aims to consolidate and discuss a number of the key ones amongst these. Several issues have already been considered in the medical analogy just discussed. Others include:

- the quality of data and other information collected;
- the focus for the development and use of indicators;
- the role of performance indicators in social justice.

Data quality

Recent experiences with databases at both the national and college levels lead me to express some concern about the quality and appropriateness of the data they contain. In this I am not alone. Many of those working within TAFE systems and colleges would share this concern.

In a nutshell some of the issues and problems are these:

- the data collected from various sources are variable in terms of their quality, completeness and consistency;
- those organisations actually collecting the data perceive very little benefit from the collection process for themselves;
- the various databases have not been designed in an integrated way so that the production of performance indicators and the use of indicators and other data in management becomes tedious;
- databases are often not constructed to answer relatively simple management questions or provide really appropriate information or data. It may be difficult to combine data from a range of databases. In other cases the quality of the questions asked of the existing data is poor - for example asking how many students there are in TAFE is different from asking how many enrolments there are. A number naively believe these questions are the same; and
- the data gathered and the performance indicators derived from them may increasingly not reflect the reality of what is happening.

These issues and problems are all well recognised and attention is being paid to them at the national, State/Territory and college levels. Nevertheless, these issues mainly relate to the collection and checking processes used and the technical aspects of both the data and the databases. The quality of data also has another dimension, that of its appropriateness.

This aspect gets back to the root questions in data gathering, including: Why are we doing it? How will we use the data? Recently significant effort has been dedicated into specifying and defining the data collected nationally and at State/Territory level. The question to be faced however (and one which COTTS will soon be investigating) is 'Are the data we are collecting the data we **really need?**

This gets back to the informational needs of those gathering the data (on the one hand), and those who will use it at other levels within and outside TAFE. It also relates to the appropriateness of data collected in terms of what TAFE and (potentially) other training providers are actually doing. For example, as the ways of delivering training diversify, as competency-based training is introduced and as more open learning and self-paced, workplace-based or on-the-job training occurs, the nature of TAFE teachers' work will change. At present the concept of teacher contact hours is enshrined both in industrial awards and in the agreed key national performance indicators. In the future, less concern may be paid to process-oriented indicators and more concern to indicators which reflect the outcomes of training, giving TAFE systems, colleges and teachers an increased freedom to determine how these outcomes will be achieved. Therefore the time is ripe to examine the quality of data collected both in terms of what is collected and how it is collected and how it is to be used. Nevertheless this has to occur within a framework of the data needs of those both within and outside the vocational education and training system, and at a variety of levels.

It will also be important to ensure that data from all registered providers of training are captured to ensure that the full extent of training (by whatever means and wherever it occurs) can be accurately collected and analysed. However, at present only a part (albeit the significant part) is captured and consolidated.

The focus of development

It has become clear both from the work undertaken at COTTS and from the central role the TAFE National Centre now plays in the collection, processing and reporting of the TAFE statistical collection, that the focus for developing a viable system of performance has to shift. At present, the development of the key national performance indicators is focused at COTTS. This is appropriate, since to develop a nationally consistent set of indicators requires a national committee.

Nevertheless the data on which the indicators are based are obtained by each State/Territory TAFE agency from data supplied by their respective colleges and other institutions. Some data comes to the TAFE National Centre from relatively small independent colleges. Other training occurring under a range of national initiatives (e.g. Jobtrain, Skillshare, and some further education) are not part of this system. Therefore, in the end, the quality of both the national data and the national performance indicators are very much dependent on the quality of the data supplied by colleges and other providers of training and further education.

Of those colleges contacted in the course of this and other projects (and it must be stressed these are relatively few) the messages that came across are:

- more use could be made of much of the potential management information and other data available within a college;

- management information systems (even student records data) tend not to be well integrated;
- in collection, varying interpretations are placed on the definition of key data elements (e.g. student enrolment, attrition and retention) which raise concerns about the comparability of college data internally (let alone with other colleges, TAFE systems and other providers); and
- the process of supplying data to central offices is seen as a burden rather than a spin-off of their own processes.

This reflects the need to focus, in the first instance, on the management information and data needs of colleges and other smaller providers so that these are met. Nevertheless the data needs of central office and other bodies within and outside the vocational education and training system need to be considered in the development of college-based systems.

At present it appears that colleges and their organisational units feel little ownership of the data that are routinely collected. A number of States are examining the role of the college in the course of redeveloping their data models. However some States still focus heavily on a centrally co-ordinated process of data gathering.

Other States, for example South Australia, have colleges involved (in many cases heavily) in the development of their own performance indicators and data systems. This has led to colleges becoming aware of deficiencies in their data collection procedures. These can then be addressed. Other providers of training have yet to be consulted about their needs, or even invited to contribute statistical data.

There are, however, other reasons for proposing this change in direction of data collection. The first reason is data completeness. In addition, trends overseas (for example those recently introduced in the UK) propose the removal of control of TAFE-like colleges from local authorities. In Australia this would be the equivalent of transferring TAFE colleges from their present State/Territory control to federal control (particularly in relation to funding), in much the same way as in higher education. Indeed momentum for the increasing 'nationalisation' of the vocational education and training system is gathering on a range of fronts, including curriculum and learning resource development, standards setting, course accreditation, etc. If, therefore, the control of TAFE colleges and the like becomes more localised this will enhance the need for high quality management information at that level. (States and Territories are also increasingly decentralising management functions.) Further, pressure to redeploy funds away from colleges not seen to be performing to those who do perform (by whatever criteria performance is measured) is also a trend in the UK.

If learners are given some form of voucher (although it may be called by some other name in Australia) as they are in the UK to spend on post-compulsory education, those colleges who provide courses and other services that are needed and are appropriate (that is, they attract customers who want to buy the service) will prosper. Others will not. This very pragmatic approach suggests the need to focus on issues related to strategic planning, management and indicators of performance to ensure that colleges can position themselves both to adapt to emerging needs and priorities and, ultimately, to provide appropriate services. Nevertheless, this may lead to some of the moral dimension of the vocational education and training system's work being overlooked.

The second issue relates to quality assurance systems at the college level. A recent publication of the Department of Education and Science, the Department of Employment and the Welsh Office in the UK (*Education and training for the 21st century: the challenge for colleges*) addressed the issues of quality assurance pointing out that great importance was attached by government to systems at the college level for monitoring and assessing quality (HMSO 1990).

This report goes on to distinguish between the quality assurance roles of:

- colleges;
- external assessors; and
- examining and validating bodies (the closest parallel in Australia being those bodies responsible for the accreditation of formal courses).

In the proposed system colleges have primary responsibility for quality control. As the report states:

> Most [colleges] already have mechanisms for assessing the quality of the education and training they provide. Performance indicators related to quality are being developed as part of college management information systems. Colleges need effective systems to improve their quality and contribute to their own efficiency and effectiveness. It would be premature to advocate any one framework, but a number of systems are being explored by colleges including BS5750, Total Quality Management (TQM) and Strategic Quality Management (SQM). Colleges will be expected to provide information to the councils about the quality assurance systems they have in place; . . . (and)
>
> **external assessors** are responsible for making an independent judgement of the quality of teaching and learning in colleges, and for offering advice. The two main sources of this external assessment at present are Her Majesty's Inspectorate and the Local Education Authority (LEA) advisers.
>
> (HMSO 1991, p.38)

In this sense the comments underline on the urgent need to develop more formalised approaches to strategic planning and total quality management within colleges. These will include use of such methods as quality circles, periodic evaluations and reviews and performance indicators. Chapter 4 dealt at some length with these issues. Queensland TAFE (see Chapter 3) has internal review processes in place and a range of colleges have or are making use of these. Their 1989/90 annual report points out that the Institutional Review and Development Branch:

- facilitated seven colleges in completing their self-study and review processes; and that
- three other colleges were nearing the end of their investigations, while a further three had begun the process.

The annual report suggested that there were strong indications of satisfaction with the self-study and review process. It was also reported that several colleges had established permanent committees to support an ongoing review function within their respective colleges.

In conclusion there is a clear need to build on the drive to improve the quality of the data collected at their sources through:

- better strategic planning at college level;

- compliance to a code of practice for evaluation and review processes and the gathering and use of management information and associated performance indicators. (Compliance with a variety of codes of practice can be performance indicators in themselves.)
- the development and dissemination of a range of appropriate college-based management information systems; and
- the development and dissemination of a range of professional approaches to judging and improving the quality and appropriateness of the programs offered by colleges.

While the latter two key issues have concentrated very much on the pragmatic dimension of performance indicators and the related management information systems and processes of which they are part, it is all too easy to forget the balancing moral dimension. This will be considered in the following section.

Indicators and social justice

The pragmatic discussion of performance indicators is balanced by its moral dimension (Guthrie 1988a). The key national performance indicators include only one social justice indicator, although a range of TAFE agencies report that they support a number of performance indicators in this area, very often at the individual program level. These are usually directed at particular target groups (women, Aborigines, single parents, migrants, the chronically unemployed, people in rural areas, etc.). As the Queensland Treasury's publication on developing performance indicators suggests indicators in this area should address some or all of the following issues:

- equity - a fair distribution of resources among client groups;
- equality - equal civil, legal and industrial rights for all;
- access - equitable access to services; and
- participation - the opportunity for individuals to participate in the decisions which affect their lives.

(Queensland Treasury 1990c, p.10)

It follows from the above that support needs to be provided to enable individuals from all groups to meet the entrance criteria for courses and to succeed within these courses (e.g. provision of study skills/literacy courses, etc.) This includes childcare facilities.

Nevertheless non-targeted programs have a range of social justice impacts as well, although the indicators of their success are often only expressed in broad terms (e.g. an x% improvement in participation by women in non-traditional programs). Only some measure of disaggregation of the data would give some guidance about the extent to which particular courses and/or colleges had contributed to the achievement of this target.

In addition, problems remain in terms of trying to isolate the extent to which participation groups are represented. Women, Aboriginal people and age are three factors which can be isolated relatively easily because they form part of the data collected nationally. Rural people and other groups can be detected by postcodes for home addresses. These postcodes can also give some guide to socio-economic status. Nevertheless other groups (nonenglish speaking background, single parents) will most likely be detected only if they are part of a specific targeted group within a program. For the most part these would be either specific programs (e.g. Jobtrain) or learners in mainstream programs where specific selection processes are applied. In some cases membership of particular targeted groups is manifested; in others it may be disguised. Therefore the level of performance may be difficult to determine with any accuracy. However, this raises the thorny question of the invasion of privacy through asking questions on enrolment forms and/or elsewhere which enable membership of a target group to be determined - and whether such data should be made available by colleges to central offices or at a national level. Alternatively such issues could be dealt with by periodic surveys using a nationally agreed methodology.

To ensure that social justice is met, indicators might address the following specific factors:

- gender inclusive curricula, teaching methodologies and materials;
- freedom from sex-based harassment;
- safety on campus or wherever courses are provided (includes, but not limited to OH&S, e.g. a well-lit, secure campus where students can safely attend evening courses, using the library at night, etc.);
- recognition of, and credit for, prior learning including overseas qualifications; and
- courses provided for under-represented groups articulating with mainstream programs.

In short, there is a need to establish guidelines on social justice, compliance with which is another indicator of performance. Such indicators are additional to those concerned with measuring the extent to which proposed targets have been met or outcomes achieved.

As the Queensland Treasury (1990c) point out:

> . . . social justice is an aspect of program effectiveness: social justice concepts have always been a principal motivating factor for government programs.

Nevertheless insufficient thought has probably been given to measuring the social justice aspects of the vocational education and training system's performance - in particular the potential and often intangible social consequences of its various activities. These are, however, very difficult to report, much less quantify. They are also subject to the same concerns as those of other outcome- oriented performance indicators and are tied up with determining the proportion of credit (or blame) that the system can take (or incur) for improvements (downturns) in the social circumstances of those who use its services.

Conclusions

It seems appropriate to draw a number of conclusions based on this survey of current practice in Australian TAFE, and the review of the literature from both Australia and overseas, and both the school and higher education sectors. A number are contained in the concluding sections of the two previous chapters (see pages 29 and 46). In this chapter the conclusions are split into two types - key findings, and some directions for the future development and use of performance indicators.

The key findings

The key findings include:

- there is a significant development in interest in performance indicators for the purpose of local planning, management, decision making and improvement. This coincides with a reawakening interest in the development and use of indicators both at the State/Territory and national levels;

- the quality of data gathered is poor. Information is misclassified (e.g. field codes) and definitions are applied inconsistently within and between reporting sources. Moreover much of the data that are gathered remain underutilised or even unanalysed (for example the published national data are not disaggregated by stream or by field of study). The quality of question asked of the database has sometimes been poor too. As pointed out previously number of students and number of enrolments are different concepts, but are readily confused if the questioner or those answering the question are unclear about the nature of the information they want. The use of data over a time series is also problematic as systems of collection and processing have either been changed or refined. This makes it difficult to determine whether apparent trends are real or artefacts of the changing data gathering and manipulation processes;

- sectors of, and participants in the vocational education and training systems are neglected in the national statistics. While some data may be collected these data are not consolidated. Alternatively, data from a range of private and other providers are not collected at all. As articulation, credit transfer and recognition of prior learning become more significant issues, it will become increasingly important to reflect the complete contribution of a variety of providers to Australia's overall training effort;

- the need for a better integration of existing databases and more complete information about the training effort that TAFE and other providers of training. So far the efforts of the private providers of training has received relatively little attention, but will need to do so as training options become more diversified and more complex;

- the debate continues over whether performance indicators are tools of accountability and control, or are one of a number of management instruments for the improvement of quality. At the local level, where predominant use will be made of indicators, improvement rather than control will be the major focus. As the indicators move higher through successive aggregations and management levels, they will increasingly become accountability-focused;

- the nature of TAFE and the training environment is changing. With this, the information needed to manage and develop the vocational education and training system further will change. Such initiatives start at the local or college level, but as government policy initiatives (such as the introduction of competency-based training and all it entails) beings to bite, so the demands for information will change and existing indicators will become increasingly irrelevant because they will be less able to capture validly the 'essence' of the system's performance;

- a balance needs to be maintained in the use of performance indicators to support TAFE's pragmatic role in training and industrial reform, together with TAFE's moral role to assist those in the community in general, but in the workforce in particular, to participate in the changes occurring in Australian society;

- a range of indicators are needed to reflect properly the diversity of activity in the areas of further education and vocational training. Thus a series of questions may need to be asked in order to provide a clear picture of performance to assist the management and decision-making processes. Indicators will be both quantitative and qualitative and may need considerable experience in their interpretation and use. TAFE and other bodies (possibly other providers as well) need to become more serious about their use of management information tools.

Future developments

Likely future developments in the use of performance indicators include:

- the development of management information systems specifically designed for use at the college or local level. There is a real need to undertake extensive work on the development, implementation and use of management information systems and their related performance indicators which are suitable for use at the college level or its equivalent. A refocussing at the college level, more precise definitions, more staff development and other significant efforts are needed to effect dramatic improvements in data quality, usefulness, and use. Moreover attention will increasingly need to be given to the validity of a number of the present national indicators as the means of providing training change and diversify. All of this will be an important part of the NATMISS project's work. In addition a 'how to do it' manual on performance indicators for the college or local level maybe a useful initiative;
- increased attention this use of indicators for comparative purposes, including interstate and international comparisons. A related development may be their increased use in decisions about resource allocation, whether at the local, regional or State/Territory levels;
- a proper examination of the data needs of a variety of individuals and groups at a variety of levels is needed to develop a well integrated national data model, or a set of compatible data models, which will cope with the changing information needs of those within and watching the Australian vocational education and training system;
- the issue of bench-marks and the value of programs in relation to their context and role needs serious consideration. Because we have had relatively little experience in the formal use of indicators and bench-marks whether at the local, State/Territory or national levels we need to be relatively flexible about bench-marks and targets to begin with. Experience in their use will help us both to more effectively set bench-marks and targets and to determine the normal 'range' within which they should fall;
- survey approaches may be used more extensively than they have in the past for determining satisfaction with service, destination and the participation of key interest groups in government policy. Increasing use may also be made of compliance audits, with their associated checklists and standards (which might be based on, or advised by, the relevant British standard); and
- codes of practice and system standards will need to be developed and agreed to in order to guide the use of management information systems and the conduct of evaluations, reviews and surveys to ensure that these are conducted appropriately. In most cases these can be adapted from existing codes. There will need to be national agreements if data and performance indicators are to be comparable.

The development of indicators within a wider management and accountability context will continue. Nevertheless caution is needed while processes are developed and experience gained. Mistakes will be made, but it will be important both to share experiences and to learn from any mistakes rather than be dragged down by them through our own, and others', unrealistic expectations.

Chapter six: Bibliography

Barnett, R. (1988). Entry and exit performance indicators for higher education: some policy and research issues. *Assessment and Evaluation in Higher Education* 13(1),16-30.

BEVFET (Bureau of Employment, Vocational and Further Education and Training). (1990a). *Assessment of unmet demand apparent in Queensland colleges 1990*. Brisbane: Planning and Analysis Branch, Division of Planning, Technology and Innovation, Bureau of Employment, Vocational and Further Education and Training.

BEVFET (Bureau of Employment, Vocational and Further Education and Training). (1990b). *Operational efficiency of college performance 1989* (revised version - November 1990). Brisbane: Planning and Analysis Branch, Division of Planning, Technology and Innovation, Bureau of Employment, Vocational and Further Education and Training.

Bormanns, M. J., Brouwer, R., In't Veld, R. J. & Mertens, F. J. (1987). The role of performance indicators in improving the dialogue between government and universities. *International Journal of Institutional Management in Higher Education* 11(2),181-194.

Bourke, P. (1986). *Quality measures in universities*. Canberra: CTEC.

Byrne, M., Houston, D. & Thomson, P. (1984a). *An approach to the evaluation of TAFE institutions*. Adelaide: TAFE National Centre for Research and Development.

Byrne, M., Houston, D. & Thomson, P. (1984b). *The evaluation of TAFE institutions handbook* (trial edition). Adelaide: TAFE National Centre for Research and Development.

Cave, M., Hanney, B., Kogan, M. & Trevett, G. (1988). *The use of performance indicators in higher education: a critical analysis of developing practice*. London: Kingsley.

Cope, R. (1991). *Total management for the TAFE institution: concepts and tools*. Adelaide: TAFE National Centre for Research and Development.

COTTS (VEETAC Committee on TAFE and Training Statistics). (1991). *Key performance indicators - State/Territory perspectives*. A report of the Committee on TAFE and Training Statistics to VEETAC. Canberra: COTTS (Unpublished paper).

Curran, S. (1988). Setting performance indicators: The right deed for the wrong reasons? In T. Wyatt & A. Ruby. *Indicators in education: Papers from the first national conference, Sydney, 1988*. Sydney: Australian Conference of Directors-General of Education.

Cuttance, P. (1989). *Performance indicators for schooling: a report*. Edinburgh: Scottish Department of Education.

Deming, W.E. (1986). *Out of the crisis*. Cambridge, Mass.: Massachusetts Institute of Technology, Center for Advanced Engineering Study.

Department of Education, NZ (undated). *Learning for life: draft performance indicators*. (unpublished paper).

Department of Employment and TAFE. (1989). *Performance indicators discussion paper*. Adelaide: DETAFE. (Unpublished paper.)

Department of Employment and TAFE. (1990). *Performance indicators training kit*. Adelaide: DETAFE. (A package incorporating text and 2 short videos.)

DES (Department of Education and Science). (1988). *Managing colleges efficiently: report of a study of efficiency in non-advanced further education for the government and the local authority associations*. London: DES and Welch Office.

Dochy, F. J. R. C., Segers, M. S. R. & Wijnen,W. H. F. W. (1990). Selecting performance indicators: a proposal as a result of research. In Goedegebuure, L. C. J., Maassen, P. A. M. & Westerheijden, D. F. (eds.) *Peer review and performance indicators: quality assessment in British and Dutch higher education*. Utrecht: Uitgeverij Lemma B.V.

Dunnell, P. & O'Loughlin, M. J. (1987). *A framework for the development of performance indicators in an educational system*. Paper presented at the Annual Conference of the Australian Council of Education, Perth, WA.

Feigenbaum, A. V. (1983). *Total quality control*. New York: McGraw Hill.

FEU (Further Education Unit). (1989). *Towards an educational audit*. London: FEU.

Findlay, P. (1990). Developments in the performance endicator debate in the United Kingdom: the research project at Portsmouth Polytechnic. In Goedegebuure, L. C. J., Maassen, A. M. & Westerheijden, D. F. (eds.) *Peer review and performance indicators: quality assessment in British and Dutch higher education*. Urecht: Uitgeverij Lemma B.V.

FitzGibbon, C. & Hazelwood, R. (1988). Performance indicators and information systems. Paper presented at the *International congress for effective schools*, London, January 1988 (Curriculum Evaluation and Management Centre, University of Newcastle upon Tyne, mimeo).

Frackmann, E. (1987). Lessons to be learnt from a decade of discussions on performance indicators. *International Journal of Institutional Management in Higher Education* 11(2),149-162.

Goedegebuure, L., Maassen, P. & Westerheijdun, D. (1990). Quality assessment in higher education. In Goedegebuure, L. C. J., Maassen, P. A. M. & Westerheijdin, D. F. (eds.). *Peer review and performance indicators: quality assessment in British and Dutch higher education*. Utrecht: Uitgeverij Lemma B.V.

Goldsworthy, D. (ed.) (1988a). *National performance indicators for TAFE*. A report to the Australian Conference of TAFE Directors. Western Australia: Department of TAFE (TD/WA 17.1).

Goldsworthy, D. (ed.) (1988b). *National performance indicators for TAFE: proceedings of the second workshop of the TAFE performance indicators planning group*. A report to the Australian Conference of TAFE Directors. Western Australia: Department of TAFE.

Goldsworthy, D. (1988c). *Performance indicators in TAFE WA*. An unpublished paper presented at a national TAFE workshop, February 1988. Perth: Department of TAFE (TD/WA 17.14).

Guthrie, H., Foyster, D., Stock, B. & Smart, D. (1986). *Making changes - evaluation and validation of TAFE programs*. Series 1. A series of 21 papers. Melbourne: RMIT and the TAFE National Centre for Research and Development.

Guthrie, H., McCurdy, S., Jamison, B. & Bell, M. (1988). *Making changes - evaluation and validation of TAFE Programs*. Series 2. A series of 11 papers. Adelaide: TAFE National Centre for Research and Development.

Guthrie, H. & Bone, J. (1989). *Commonwealth programs and Regency College of TAFE: an evaluation*. Adelaide: TAFE National Centre for Research and Development. (One volume of the set 'Evaluation of Commonwealth-TAFE related programs'. Canberra: DEET.)

Guthrie, H. (1988a). *Performance indicators in TAFE*. Adelaide: TAFE National Centre for Research and Development.

Guthrie, H. (1988b). What can a group of us do? In Guthrie, H., McCurdy, S., Jamison, B. and Bell, M. (1988). *Making changes - evaluation and validation of TAFE programs*. Series 2, Paper 3. Adelaide: TAFE National Centre for Research and Development.

Guthrie, H. & Loveder, P. (1990). *Approaches to multiple entry and exit points for associate diplomas*. Adelaide: TAFE National Centre for Research and Development.

Hall, W., Dean, S., Guthrie, H., Hayton, G., Mageean, P. & Scarfe, J. (1991). *National review of TAFE reacher preparation and development: stage 2 - models*. Adelaide: TAFE National Centre for Research and Development.

Hastings, S. (1988). *The 1988 TAFE performance indicator workshops: A report on concerns and issues*. Perth: Department of TAFE, Strategic Planning Unit (TD/WA 17.2).

Hattie, J. (1990). Performance indicators in education. *Australian Journal of Education 34(3)*,*249-276*.

Hayton, G., Neylon, K., Inglis, A. & Hayes, M. (1989). *Integrating quality concepts into TAFE courses*. Adelaide: TAFE National Centre for Research and Development.

Hayton, G., Toop, L., Loveder, P. & Mageean, P. (1991). *Methodologies for measurement of client satisfaction with TAFE services: summary report*. Adelaide: SA Department of Employment and TAFE and the TAFE National Centre for Research and Development.

Henderson, C. (1987a). Performance indicators in TAFE: carrot or stick? Paper delivered to the Australian Association of TAFE Principals, Annual Conference. Perth: Western Australia (TD/WA 15.3).

Henderson, C. (1987b). *College evaluation: a discussion paper*. Perth: Education Department of Western Australia, Technical Education Division.

HMSO. (1985). *Obtaining better value from further education*. A report by the Audit Commission. London: Her Majesty's Stationery Office (HMSO).

HMSO. (1991). *Education and training for the 21st century: volume 2 the challenge to colleges*. London: Her Majesty's Stationery Office (HMSO).

Hopkins, D. & Leask, M. (1989). Performance indicators and school development. *School Organisation* 9(1), 3-20.

Hüfner, K. (1987). The role of performance indicators in higher education: the case of Germany. *International Journal of Institutional Management in Higher Education* 11(2), 140-148.

Improving Australia's training system. (1989). A paper circulated by The Hon. J. S. Dawkins, M.P. Canberra: AGPS.

Institutional Review and Development Branch. (1988a). *External review committee operating guidelines*. Brisbane: Division of Operational Performance, Department of Employment, Vocational Education and Training.

Institutional Review and Development Branch. (1988b). *Guidelines for institutional self-evaluation*. Brisbane: Division of Operational Performance, Department of Employment, Vocational Education and Training.

Institutional Review and Development Branch. (1989a). *Institutional evaluation process: policies and overview.* Brisbane: Division of Operational Performance, Department of Employment Vocational Education and Training.

Institutional Review and Development Branch. (1989b). *External review: advice to host institutions: guidelines for institutional self-evaluation.* Brisbane: Division of Operational Performance, Department of Employment, Vocational Education and Training.

Institutional Review and Development Branch. (1990). *Manual for institutional self-study.* Brisbane: Division of Operational Performance, Bureau of Employment, Vocational and Further Education and Training.

Jäppinen, A. (1987). The current situation regarding the development and use of performance indicators in Finland. *International Journal of Institutional Management in Higher Education* 11(2), 163-170.

Johnston, R. (1989). Do you use the telephone too much? A review of performance indicators, evaluation and appraisal in British universities. *Journal of Geography in Higher Education* 13(1), 31-44.

Kalecki, M. (1989) cited in Paardekooper, C. M. M. & Spee, A. A. J. (1990). A government perspective on quality assessment in Dutch higher education. In Goedegebuure, L. C. J., Maassen, P. A. M. & Westerheijden, D. F. (eds.) *Peer review and performance indicators: quality assessment in British and Dutch higher education.* Utrecht: Uitgeverij Lemma B.V.

Kamis-Gould, E. (1987). The New Jersey performance management system: a state system and uses of simple measures. *Evaluation and program planning* 10(3), 249-255.

Lagunzad, J. (1990). *Measuring the utilisation of facilities in TAFE: report of the facilities utilisation measurement (FACUM) project.* Adelaide: TAFE National Centre for Research and Development.

Lloyd, D. (1990). *Enrolment management system: report of the TAFE enrolment review.* Perth: Department of Technical and Further Education.

Mageean, P. (1990). *Facilitated appraisal for college executives (FACE): a handbook for users.* Adelaide: TAFE National Centre for Research and Development.

Moses, I. & Roe, E. (1986). *Departmental reviews in higher education institutions.* Canberra: CTEC.

Nagel, J. (1991). *Review of TAFE funding in the Northern Territory.* Darwin: NT Department of Education (TD/TNC 26.06).

Paardekooper, C. M. M. & Spee, A. A. J. (1990). A government perspective on quality assessment in Dutch higher education. In Goedegebuure, L. C. J., Maassen, P. A. M. & Westerheijden, D. F. (eds.) *Peer review and performance indicators: quality assessment in British and Dutch higher education.* Utrecht: Uitgeverij Lemma B.V.

Payer, L. (1990). *Medicine and culture: notions of health and sickness.* London: Victor Gollancz Ltd.

Queensland Treasury. (1990a). *Making results matter: program management handbook.* Brisbane: Program and Strategic Review Branch, Queensland Treasury.

Queensland Treasury. (1990b). *Making results matter: guidelines for the conduct of evaluations.* Brisbane: Program and Strategic Review Branch, Queensland Treasury.

Queensland Treasury. (1990c). *Making results matter: guidelines for the development of performance indicators*. Brisbane: Program and Strategic Review Branch, Queensland Treasury.

Reporting on education progress. (1989). A series of bulletins. Sydney: Australian Conference of Directors-General of Education. Titles include:

Bulletin 1: Project description.
Bulletin 2: Education indicators: a bibliography.
Bulletin 3: Education indicators: an overview.
Bulletin 4: Indicator examples from other countries.
Bulletin 5: Education indicators: concepts, definitions and issues.
Bulletin 6: Participation rates as education indicators.
Bulletin 7: What can be learned from the social indicators movement.
Bulletin 8: Indicators of school effectiveness.
Bulletin 9: Using indicators for school improvement.
Bulletin 10: Evaluating primary school achievements in the next decade.
Bulletin 11: Why invest in performance indicator development?
Bulletin 12: Comparing what? making international indicator comparisons.
Bulletin 13: Indicators for equity: a neglected part of the debate.
Bulletin 14: What's all this talk about reporting?
Bulletin 15: Indicators, evaluation and accountability mechanisms in public school systems.

Roe, E. & McDonald, R. (1983). *Informed professional judgement: a guide to evaluation in post-secondary education*. St Lucia, Queensland: University of Queensland Press.

Rutherford, D. (1987). Indicators of performance: reactions and issues. *Assessment and Evaluation in Higher Education* 11(2), 94-104.

Singh, M. G. (1988). Some issues in the use of performance indicators on education. In *Educational research in Australia: indigenous or exotic*? Unpublished paper presented at the Annual Conference of the Australian Association for Research in Education, University of New England, Armidale, NSW.

Sizer, J. (1990). Funding councils and performance indicators in quality assessment in the United Kingdom. In Goedegebuure, L. C. J., Maassen, P. A. M. & Westerheijden, D. F. (eds.) *Peer review and performance indicators: quality assessment in British and Dutch higher education*. Utrecht: Uitgeverij Lemma B.V.

Smillie, R. (1990). *Performance indicators for Aboriginal programs in TAFE: a discussion paper*. Darwin: TAFE Curriculum Research and Development, NT Department of Education (TD/TNC 22.38).

Southland Polytechnic (1990). *Programme evaluation manual* (Draft document). Invercargill, NZ: Southland Polytechnic.

Theodossin, E. (1987). Quality control in education: the use of performance indicators. In E. Theodossin & C. Thomson. *Performance indicators: theory and practice*. Coombe Lodge Report, 20(1). Bristol: Further Education Staff College, 3-29.

Vroeijenstijn, T. I. & Acherman, H. (1990). Control oriented versus improvement oriented quality assessment. In Goedegebuure, L. C. J., Maassen, P. A. M. & Westerheijden, D. F. (eds.) *Peer review and performance indicators: quality assessment in British and Dutch higher education*. Utrecht: Uitgeverij Lemma B.V.

Weeks, I. (1990). *1990 graduate destination survey.* Brisbane: Planning and Analysis Branch, Division of Planning, Technology and Innovation, Bureau of Employment, Vocational and Further Education and Training.

Westerheijden, D. F. (1990). Peers, performance and power: quality assessment in the Netherlands. In Goedegebuure, L. C. J., Maassen, P. A. M. & Westerheijden, D. F. (eds.) *Peer review and performance indicators: quality assessment in British and Dutch higher education.* Utrecht: Uitgeverij Lemma B.V.

Wyatt, T. & Ruby, A. (Eds.) (1988). *Indicators in education: papers from the first national conference.* Sydney: Australian Conference of Directors-General of Education.

Zeleny, M. (1991). Knowledge as capital: integrated quality management. *Prometheus* 9(1), 93-101.

Appendix one - Project network

TAFE National Centre for Research and Development

Hugh Guthrie, Senior Research and Development Officer
John Foyster, Manager, Statistics Division
Geoff Hayton, Manager, Core Grant Research
Leigh Toop, Research and Development Officer

New South Wales

Corporate Planning Division, TAFECOM
Marie Aloise
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Division of Information Systems, TAFECOM
Robert Mawer

ACT Institute of TAFE

Norm Fisher, AM
Peter Mitchell

Victoria

Resources Management Division, State Training Board (STB)

Geoff Hargreaves

Research and Evaluation Branch, STB

Peter Monie

Tasmania

Planning and Co-ordination Branch, Department of Employment, Industrial Relations and Training

Robert Frew

Northern Territory

Office of Tertiary Education

Robert Smillie

Rik Ralph

South Australia

Corporate Planning and Review, DETAFE

Tim Pulsford
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Robyn Hillier

Gilles Plains College of TAFE

Brian Nussey

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Division of Planning, Technology and Innovation, Bureau of Employment, Vocational and Further Education and Training (BEVFET)

Stewart Newell
Ian Weeks
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Rory O'Connor
Peter Mounteney
Murray Aldred
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Division of Research and Learning Strategies (BEVFET)

Neil Costa
John Dungan

Western Australia

Strategic Initiatives - Department of TAFE

Jim Thom
David Lloyd
Angie Dominish

Computing and Information Technology - Department of TAFE

Geoff Larson
Frank Battista

Department of Employment, Education and Training

Peter Dowling
Nick Neal

Appendix two: Indicators and collection processes

GRADUATE DESTINATIONS

This indicator is not collected by:

Northern Territory
Tasmania
Victoria.

Australian Capital Territory

Graduate destinations

(graduate of A/Diploma, Adv. Cert. and some Certificate courses).

Collecting

How?	Annual Survey by questionnaire.
By Whom?	Careers Education.

Reporting

How?	Published report *The key to employment*.
By Whom?	-

The information is reported externally by the ACT Institute of TAFE.

New South Wales

Graduate destinations

(post-course employment and further training outcomes for 6 Industry Training Divisions (ITDs) - collected for the following industries within ITDs (Information Technology, Tourism and Hospitality, Finance and Investment, Aviation, Urban Horticulture, Fashion)).

Collecting

How?	Survey of recent graduates in selected courses for 6 ITDs.
By Whom?	6 ITDs.

Reporting

How:	Selected tables.
By Whom?	6 ITDs.

The information is reported externally in the Annual Report.

Queensland

Collecting

How? Questionnaire.

By Whom? State Office.

Reporting

How? Report.

By Whom? Planning and Performance Analysis Branch.

This indicator is for internal publication and distribution. It is used externally where appropriate.

Western Australia

WA DTAFE has conducted three annual graduate destination surveys. Although the information has considerable utility for performance measurement it has not been formally constituted as a performance indicator.

The first two surveys were conducted by the TAFE Counselling Service and reported in published reports. They were principally oriented towards providing information for counselling prospective students. The third and most recent survey was conducted by the Curriculum Branch and was intended to have a more general utility. A draft report was prepared but was not widely distributed following concern about the diffuse nature of the objectives served by the survey.

It is planned that information collected through student surveys will be constituted as performance indicators as part of the TAFE Learning Management System (LMS) currently under development.

EXAMINATION PASS RATE

This indicator is not collected by:
Northern Territory
Victoria (see note on Figure 2.1 in the main report).

> Note that the October 1988 meeting of the Performance Indicators Planning Group recommended that the examination pass rate be renamed the **Subject Pass Rate** (i.e. the number of students who successfully met the requirements of the subject, divided by the number of students who enrolled in the subject.)

Australian Capital Territory

Collecting

How?	Extraction from computerised student collection (OLSAS).
By Whom?	Student Administration.

Reporting

How?	Academic year reporting, i.e. by March of the following year. The indicator measures data by school, course subject, gender and award.
By Whom?	Education Program, ACT Institute of TAFE.

The information is for *internal use only*.

New South Wales

Collecting

How?	Collected for all major award courses through central computer system.
By Whom?	Student Administration.

Reporting

How?	By subject, course, college and ITD (Industry Training Division).
By Whom?	Statistics Division.

The information is *reported externally* in the annual report as an average for selected courses in 6 ITDs (Information Technology, Tourism & Hospitality, Finance & Investment, Aviation, Urban Horticulture and Fashion). Internally the information is available on request.

Queensland

Collecting

How?	Examination data base.
By Whom?	State Office.

Reporting

How? Spreadsheet.

By Whom? State Office.

The information is not yet published. 1990 was a 'bench-mark' year. The information will be incorporated in a publication on *College operational effectiveness*.

Tasmania

Collecting

How: These data are entered at the college level for each subject and stored on a centralised database. Calculations are made partly electronically with a manual component.

By Whom? Statistics Officer.

Reporting

How? Calculation is a fairly time consuming process and so reports are only produced on a limited basis and only specific courses are targeted. Comparability of subjects and courses is complicated by the fact that differing sets of awards are used, some subjects use alphabetic awards others use numeric, while some subjects do not have any award attached. This system complicates electronic retrieval and makes manual manipulation of data awkward. It can be appreciated that this system makes precision almost impossible with only rough 'guesstimates' being possible. Clearly if it was necessary to report on pass rates on a large scale a uniform award system would have to be adopted.

By Whom? Statistics Officer.

These statistics are not published and are used on a limited basis internally by departmental officers.

Western Australia

This is a formal performance indicator collected via the TAFE Student Data System and reported in the Department's annual report in compliance with the requirements governing performance indicators under the Financial Administration and Audit Act (FAAA). Targets for this indicator have previously been set in college resource agreements, although the audit of the 1989 agreements cast doubt over the value of such an indicator given the manner in which it was set and reported.

SAT EXAMINATION RATE

This indicator is not collected by:
Northern Territory.

Note that it was recommended at the October 1988 meeting of the Performance Indicators Planning Group that the sat examination rate be renamed **Subject Completion Rate**, i.e. the number of students who completed the assessable requirements of the subject, divided by the number of students who enrolled in the subject.

Australian Capital Territory

Collecting

How? Extraction from computerised student collection (OLSAS).

By Whom? Student Administration.

Reporting

How? Academic year reporting, i.e. by March of the following year. The indicator measures data by school, course subject, gender and award.

By Whom? Education Program, ACT Institute of TAFE.

The information is for internal use only.

New South Wales

Collecting

How? Collected for all major award courses through central computer system.

By Whom? Student Administration.

Reporting

How? By subject, course, college and ITD (Industry Training Division).

By Whom? Statistics Division.

The information is available internally on request.

Queensland

Collecting

How? Examination database.

By Whom? State Office.

Reporting

How?	Spreadsheet.
By whom?	State Office.

The information is not yet published. 1990 was a 'bench-mark' year. The information will be incorporated in a publication on *College operational effectiveness*.

Tasmania

Collecting

How?	Calculated electronically for each subject. Results, if given, are compared to enrolments to give an attrition measure.
By Whom?	Statistics Officer.

Reporting

How?	Calculated electronically on a once a year basis. Calculations give a percentage of those students who achieve a result in the subject. Calculations are made for subjects and courses across colleges.
By Whom?	Statistics Officer.

These statistics are not published but are used internally by departmental officers.

Western Australia

See the relevant entry for examination pass rate.

ANNUAL GRADUATE NUMBERS

This indicator is not collected by:
Northern Territory.

Australian Capital Territory

Collecting

How?	Extraction from computerised student collection (OLSAS). It is collected for all formal awards as part of the annual graduation process.
By Whom?	Student Administration.

Reporting

How?	Graduate handbook.
By Whom?	ACT Institute of TAFE.

The information is published for *external* consumption.

New South Wales

Collecting

How?	Collected for major award courses through central computer system.
By Whom?	Statistics Division.

This information is reported externally in the annual report, numbers by ITD only. Internally, the information is available on request.

Queensland

Collecting

How?	Data sheets.
By Whom?	Colleges.

Reporting

How?	Computer printouts.
By Whom?	State Office.

The information has not yet been published. 1990 was a 'bench-mark' year. It is to be incorporated in a publication on *College operational effectiveness*.

Tasmania

Collecting

How?	Colleges manually work out which students qualify for an award. They collate these data and forward them to a centralised examinations section. At this point data are entered for those students who qualify. This information is tied to course information and student data in the larger database.
By Whom?	Collected by colleges and entered onto computer system by operators in a centralised examinations section.

Reporting

How?	Reporting is undertaken electronically using a query language. Data are downloaded onto a PC and manipulated. Comparisons can be made from 1988 onwards for each course.
By Whom?	Statistics Officer.

This information is not published and is only produced for targeted courses on a limited basis. It would be possible to run off graduate numbers for each course on a yearly basis. This information was required by the Commonwealth as part of its statistics collection for the 1986 collection. The phrasing of that data requirement (element 150) was as follows *The number of awards granted during the reference year in respect of the course.* Currently the data are only produced for staff members who require the information for individual research projects.

Victoria

Collecting

How?	Annual statistics for previous year.
By Whom?	Statistics Section (which is part of the College Budgets and Performance Management Section (CBPMS) located in the Resources Management Division).

Reporting

How?	Data tape to DEET

It was noted that this information was not published. Indeed it was seen as useless and dangerous information without substantial qualifications and notes.

Western Australia

Annual graduate numbers have been collected at least for the past decade and have been used informally for performance measurement although not formally constituted as a performance indicator.

Previously manually compiled this statistic is now compiled on the Student Data System. It is collected by the TAFE Examinations Branch. To date it has only been reported internally however it may now be featured in the Department's annual report.

It is planned that course graduation rates will be a key performance indicator for DTAFE in the TAFE Learning Management System (LMS).

STUDENT CONTACT HOURS/TEACHING HOUR

This indicator was collected by all States/Territories (see Cahpter 3 of this report regarding South Australia).

Australian Capital Territory

Collecting

How?	OLSAS (computerised student collection) for ASCH and Teaching hours from computerised full-time and part-time teacher duty hours system.
By Whom?	Education program.

Reporting

How?	Management reports.
By Whom?	ACT Institute of TAFE.

The indicator is for internal consumption.

New South Wales

Collecting

How?	Extracted from central computer system.
By Whom?	Statistics Division.

Reporting

How?	By Industry Training Division (ITD) and State total.
By Whom?	Statistics Division.

The information is published in DEET's *Selected TAFE Statistics*. Available to NSW TAFE management on request.

Northern Territory

Collecting

How?	Enrolment and course forms completed at college and/or regional level.
By Whom?	Colleges/regions.

Reporting

How?	Reports to colleges and regions and to central management.
By Whom?	Office of Tertiary Education.

The information will be used internally until its reliability is established.

Queensland

Collecting

How? Centralised enrolment database and centralised teacher duty hours database.

By Whom? State Office.

Reporting

How? Spreadsheet.

By Whom? State Office.

The indicator is for internal publication and distribution. It is published externally where appropriate.

Tasmania

Collecting

How? Contact hours for each course are stored electronically on the centralised database. This data element has to be kept as part of the Commonwealth-State Resource Agreement.

Course contact hours are calculated from set contact hour figures for each subject. These set subject figures are entered onto the database by officers at a central office when the subject is created. Subject hours are multiplied by enrolments for each course to give a course figure.

Colleges return to central office a staff return once a year at the beginning of each year for the preceding school year. This return shows the number of teaching hours for each college. As information is only available at the college level and not at the course level it can be seen that this indicator under present circumstances is of limited use.

By Whom? Co-ordinated by Statistics Officer.

Reporting

How? Reporting (at the college level) has been on a very limited basis where figures are calculated manually using data from staff returns and totals of contact hours for the colleges.

By Whom? Statistics Officer.

Figures are not published and this indicator has only been used a number of times in the last few years. As noted this information is only able to be produced on a yearly basis and only for the preceding year.

Victoria

Collecting

How? Financial statistics collection.

By Whom? Statistics Section.

Reporting

How? Computer summary by college; available also down to course level.

By Whom? College Budgets and Performance Monitoring Section (CBPMS) in the Resources Management Division.

The indicator is published internally but selected data are made available for college management and budget discussion purposes. Acts as surrogate average class size indicator - very useful for comparative purposes.

Western Australia

These are currently in use and will continue to be used as formal performance indicators. They are compiled on the Student Data System by the computing section and reported in relation to College Resource Agreements (internal distribution only - although planned to include in the DTAFE Annual Report).

AVERAGE TEACHING HOURS/FULL-TIME TEACHER

Australian Capital Territory

Collecting

How?	Computerised full-time teacher duty hours system.
By Whom?	Education program.

Reporting

How?	Management reports.
By Whom?	ACT Institute of TAFE.

The indicator is for *internal consumption*.

New South Wales

Collecting

How?	One week census of teaching programs.
By Whom?	Statistics Division.

Reporting

How?	By college, ITD, and State total.
By Whom?	Statistics Division.

The information is not published. It is available to NSW TAFE management on request.

Northern Territory

Collecting

How?	Enrolment and course forms completed at college and/or regional level.
By Whom?	Colleges/regions.

Reporting

How?	Reports to colleges and regions and to central management.
By Whom?	Office of Tertiary Education.

The information will be used internally until its reliability is established.

Queensland

Collecting

How?	Centralised teacher duty hours database.
By Whom?	State Office.

Reporting

How?	Spreadsheet.
By Whom?	State Office.

The indicator is for internal publication and distribution. It is published externally where appropriate.

Tasmania

Collecting

How?	This indicator would have only a limited use at a central office level; however it is reasonable to expect that it is used within colleges. Given the annual staff return it would be possible to make some calculation for each college and for the whole division. The annual staff return is required by the Commonwealth as part of the resource agreement.
By Whom?	Statistics Officer.

Reporting

How?	Very limited basis at central office level but possibly greater use at college level.
By Whom?	College staff.

Not published and used only internally.

Victoria

Victoria does not presently collect information for this indicator. However it will be collected in future by the College Budgets and Performance Monitoring Section (CBPMS) in the Resources Management Division. At present it is reported on an *ad hoc* basis to the CBPMS by colleges. In the future it will be reported by unit record.

Western Australia

Data on teaching hours per full-time teacher are used in colleges for a variety of management purposes but is not constituted as a formal performance indicator.

RECURRENT COST/STUDENT CONTACT HOUR/COURSE

Note: A number of States cannot disaggregate these data to the course level.

Australian Capital Territory

Collecting

How?	Institute/school budget papers and OLSAS (computerised student collection).
By Whom?	Financial management.

Reporting

How?	Management reports.
By Whom?	ACT Institute of TAFE.

The indicator is for internal consumption.

New South Wales

Note that for this indicator data are not available at course level. However information is collected from the NSW corporate indicators on the Cost/Student Contact Hour/School. This is based on salaries and consumable expenses. The data are collected by Finance from central financial records and reported by School in the Annual Report. In addition information has also been gathered on the total cost/student contact hour on a college basis for two colleges (North Sydney and Grafton). These data were gathered by Finance and manually extracted from college records. They were reported both externally in the Annual Report and internally to respective college managements.

Northern Territory

Collecting

How?	Enrolment and course forms completed at college and/or regional level.
By Whom?	Colleges/regions.

Reporting

How?	Reports to colleges and regions and to central management.
By Whom?	Office of Tertiary Education.

The information will be used internally until its reliability
is established.

Queensland

Collecting

How?	Centralised student enrolment database. MSA Financial accounting database.
By Whom?	State Office.

Reporting

How? Spreadsheet.

By Whom? State Office.

The indicator is for internal publication and distribution. It is published externally where appropriate.

Tasmania

Collecting

How? This indicator is used by program managers. Contact hours per course are held on a centralised database. Program managers make their own calculations based on enrolment data.

By Whom? Enrolment data entered by colleges.

Reporting

How? Currently no set reporting format exists. Contact hour figures for each course can be run off at the college level and at head office.

By Whom? Data processing officers at the respective locations run off monthly course figures. Program managers make their own calculations. It should be noted that costing would be targeted at the college level; it would be rare to find a widespread use of this indicator at the course level within colleges. At the head office level recurrent cost per student contact hour per course is being used, but only on a limited basis.

Not published, these figures are used internally. Note that recently TAFE within Tasmania has merged with several other departments. As a consequence of this change the information needs of the department are being reassessed. It should be possible to electronically integrate the enrolment system with the personnel and financial systems. When this occurs (and given planned changes to the Division's system of budgeting) it is reasonable to expect that greater use will be made of this indicator.

Victoria

Collecting

How? Financial statistics return based on:

- direct teaching costs x course,
- total costs x college,
- cost by activity, e.g. admin/library/student services etc, per student contact hour by college.

By Whom? The College Budgets and Performance Monitoring Section (CBPMS) in the Resources Management Division.

Reporting

How? Computer printouts by course/course types - e.g. field of study. Also used to advise colleges on fee-for-service changes.

By Whom? CBPMS, Manager Finance.

This is the most widely used indicator of college performance. It is used internally for college comparison, budget discussions etc.

Western Australia

Current data collection and methods of inputting costs are not considered sufficiently reliable or accurate to be used for performance measurement.

Appendix three - Comments on specific indicators by COTTS*

1. Client assessment

Three measures of this dimension of system effectiveness are proposed:

a. Student Destination

b. Student Satisfaction

c. Employer Satisfaction

These are to be collected using survey materials which have already been developed and trialled in the ACT and a number of States, including New South Wales, South Australia, Queensland and Western Australia. The proposal is that industry groups be sampled in all States and Territories in a structured way such that all industries are covered over a three to five year period. (There would be flexibility to include industries of national priority in samples at short notice.)

2. Education achievement

2.1 a. Sat Examination Rate

b. Subject Pass Rate

These two indicators relate to retention in, or completion of, subjects and other programs leading to desired educational outcomes. They have been used in a number of States/Territories for two or three years to measure the number and proportion of students still on course at the end of their annual enrolled program and the number and proportion who complete the assessment requirements satisfactorily. National reporting will be at an appropriate level of aggregation such as Stream/Field of Study and may need to be rolled across study areas, depending on resources.

c. Course/Program Completion Numbers

A broader indicator than Annual Graduate Numbers which is at course or program of study level rather than subject level. Because existing systems require students to enrol for an award or other course when they have no intention of taking the whole course, this indicator will be of value as a time series of numbers not linked to commencement numbers.

2.2 Student Contact Hours/Direct Teaching Hours

Universally used but in need of careful definition of populations and the teaching hours to be included. There is a particular difficulty with defining equivalents for distance education delivery and for groups such as Aboriginals in some States and the N.T.

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* These comments are drawn from the COTTS paper prepared for VEETAC (COTTS 1991)

2.3 Average Teaching Hours/Full-time Teacher

Clear definition is required of the components of this indicator; in particular the calculation of the number of full-time teachers, or equivalent, may need to be related to prevailing award conditions for teachers in each State. Whether or not the denominator of this proposed indicator should be as stated or an EFT figure for all teachers, and how the issue of duty hours and equivalents should be treated, also requires investigation.

2.4 Cost/Student Contact Hour

Although such an indicator is in general use already, there are major difficulties in establishing and achieving consistent finance data. The scope of the expenditure element will require careful delineation, probably drawing on expertise in the ABS and Commonwealth Grants Commission. A consistent and reliable calculation of student contact hours is also problematic given TAFE's diversity of delivery strategies and changes in the balance between them. Thus the development of this indicator could well be the greatest technical problem facing COTTS.

3. Access

3.1 TAFE Participation Rates

A linking of TAFE participation to population (initially could be student contact hours per 1000 population aged 15+) with possible progressive extension to population sub-groups (e.g. women, ethnic groups, rural population).

3.2 Unmet Demand

The current DEET collection is not reliable but merits high priority for improvement. Work will be needed on mechanisms for collecting this information within a strict set of definitions and code of practice. A particular concern is duplicate applications by prospective students as TAFE systems generally do not have a central clearinghouse operation at either the State/Territory or national level as does higher education. Records are held at provider level and incompletely, which makes accurate recording difficult to achieve.

4. Commercial activity

4.1 Industry-Funded Training/Total Recurrent

To be developed.

4.2 A staff development/industry experience indicator to be developed.

Appendix four: Key performance indicators (KPIs) for the three areas of responsibility in the ACT Institute of TAFE

1. Education delivery KPIs

Effectiveness

The extent to which:

- course offerings contribute to the economic development and social priorities of the ACT Government;
- courses are accredited as meeting national educational and industry standards;
- annual graduate numbers increase;
- students are satisfied with their educational experience;
- participation of disadvantaged groups increases; and
- industry training requirements are met.

Efficiency

The extent to which:

- courses are provided within budget;
- student contact hours per teaching hour increase;
- class sizes permit effective learning;
- consumables are used to best advantage;
- use of educational facilities is maximised; and
- an appropriate balance between full-time and part-time teaching staff is maintained.

2. Education services KPIs

The extent to which:

- curriculum, teaching strategies and course profiles meet national standards;
- appropriate articulation arrangements with other educational institutions and sectors permit ready transfer into and from TAFE courses;
- students, the community and industry are satisfied with TAFE services;
- support services enhance student learning;

- access to, and participation in, TAFE services (is) enhanced;
- educational services increase course completion rates and improve the graduate success rate.

3. Corporate services KPIs

Effectiveness

To the extent which:

- management information and advice is timely, relevant and accurate; and
- provision of building and estate, personal and other support services meet statutory requirement and user needs.

Efficiency

The extent to which:

- services provided by the Institute are achieved within budget and meet performance standards of timeliness and quality.